LANCE R. LEFLEUR
DIRECTOR

KAY IVEY
GOVERNOR

Alabama Department of Environmental Management
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1400 Coliseum Blvd. 36110-2400 ▪ Post Office Box 301463
Montgomery, Alabama 36130-1463
(334) 271-7700 ▪ FAX (334) 271-7950

APRIL 1, 2021

MEREDITH BRUICK
SITE LEADER
DC ALABAMA, INC.
1940 OHIO FERRO ROAD
MOUNT MEIGS AL 36057

RE: REVISED DRAFT PERMIT MODIFICATION
NPDES PERMIT NUMBER AL0083763

Dear Ms. Bruick:

Transmitted herein is a revised draft of the referenced permit modification.

We would appreciate your comments on the permit within **30 days** of the date of this letter. Please direct any comments of a technical or administrative nature to the undersigned.

By copy of this letter and the draft permit, we are also requesting comments within the same time frame from EPA.

Our records indicate that you are currently utilizing the Department's web-based electronic environmental (E2) reporting system for submittal of discharge monitoring reports (DMRs). Your E2 DMRs will automatically update on the effective date of this permit, if issued.

The Alabama Department of Environmental Management encourages you to voluntarily consider pollution prevention practices and alternatives at your facility. Pollution Prevention may assist you in complying with effluent limitations, and possibly reduce or eliminate monitoring requirements.

If you have questions regarding this permit or monitoring requirements, please contact Scott Jackson by e-mail at **scott.jackson@adem.alabama.gov** or by phone at **(334) 394-4366.**

Sincerely,

Scott Ramsey, Chief
Industrial Section
Industrial/Municipal Branch
Water Division

Enclosure: Draft Permit

pc via website: Montgomery Field Office
EPA Region IV
U.S. Fish & Wildlife Service
AL Historical Commission
Advisory Council on Historic Preservation
Department of Conservation and Natural Resources

Birmingham Branch
110 Vulcan Road
Birmingham, AL 35209-4702
(205) 942-6168
(205) 941-1603 (FAX)

Decatur Branch
2715 Sandlin Road, S.W.
Decatur, AL 35603-1333
(256) 353-1713
(256) 340-9359 (FAX)

Mobile Branch
2204 Perimeter Road
Mobile, AL 36615-1131
(251) 450-3400
(251) 479-2593 (FAX)

Mobile-Coastal
3664 Dauphin Street, Suite B
Mobile, AL 36608
(251) 304-1176
(251) 304-1189 (FAX)

ADEM
Alabama Department of Environmental Management

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT

PERMITTEE: DC ALABAMA, INC.

FACILITY LOCATION: DC ALABAMA, INC.
1940 OHIO FERRO ROAD
MOUNT MEIGS, AL 36057

PERMIT NUMBER: AL0083763

RECEIVING WATERS: DSN001-DSN003: UNNAMED TRIBUTARY TO MILLER CREEK

DSN004: TALLAPOOSA RIVER

In accordance with and subject to the provisions of the Federal Water Pollution Control Act, as amended, 33 U.S.C. §§1251-1388 (the "FWPCA"), the Alabama Water Pollution Control Act, as amended, Code of Alabama 1975, §§ 22-22-1 to 22-22-14 (the "AWPCA"), the Alabama Environmental Management Act, as amended, Code of Alabama 1975, §§22-22A-1 to 22-22A-17, and rules and regulations adopted thereunder, and subject further to the terms and conditions set forth in this permit, the Permittee is hereby authorized to discharge into the above-named receiving waters.

ISSUANCE DATE: NOVEMBER 19, 2018

EFFECTIVE DATE: DECEMBER 1, 2018

EXPIRATION DATE: NOVEMBER 30, 2023

MODIFICATION ISSUED DATE:

MODIFICATION EFFECTIVE DATE:

Revised Draft

Alabama Department of Environmental Management

INDUSTRIAL SECTION
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT

TABLE OF CONTENTS

PART I DISCHARGE LIMITATIONS, CONDITIONS, AND REQUIREMENTS

A. DISCHARGE LIMITATIONS AND MONITORING REQUIREMENTS

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN001Q: Uncontaminated groundwater and stormwater run-off associated with silicon metal manufacturing. 3/ 4/

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Monthly Average	Daily Maximum	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency 2/	Sample Type	Seasonal
pH	-	-	REPORT S.U.	-	REPORT S.U.	Quarterly	Grab	-
Solids, Total Suspended	-	-	-	REPORT mg/l	REPORT mg/l	Quarterly	Grab	-
Oil & Grease	-	-	-	-	15.0 mg/l	Quarterly	Grab	-
Arsenic, Total (As As)	-	-	-	-	REPORT mg/l	Quarterly	Grab	-
Chromium, Total (As Cr)	-	-	-	-	REPORT mg/l	Quarterly	Grab	-
Copper, Total (As Cu)	-	-	-	-	REPORT mg/l	Quarterly	Grab	-
Lead, Total (As Pb)	-	-	-	-	REPORT mg/l	Quarterly	Grab	-
Nickel, Total (As Ni)	-	-	-	-	REPORT mg/l	Quarterly	Grab	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ See Part IV.A for Best Management Practices (BMP) Plan Requirements.

4/ See Part IV.B for Stormwater Measurement and Sampling Requirements.

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN001Q (continued): Uncontaminated groundwater and stormwater run-off associated with silicon metal manufacturing. **3/ 4/**

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS			MONITORING REQUIREMENTS 1/				
EFFLUENT CHARACTERISTIC	Monthly Average	Daily Maximum	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency 2/	Sample Type	Seasonal
Aluminum, Total (As Al)	-	-	-	-	REPORT mg/l	Quarterly	Grab	-
Selenium, Total (As Se)	-	-	-	-	REPORT mg/l	Quarterly	Grab	-
Bis (2-Ethylhexyl) Phthalate 5/	-	-	-	-	REPORT ug/l	Quarterly	Grab	-
Flow, In Conduit or Thru Treatment Plant	REPORT MGD	REPORT MGD	-	-	-	Quarterly	Instantaneous	-
Solids, Total Dissolved	-	-	-	-	REPORT mg/l	Quarterly	Grab	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ See Part IV.A for Best Management Practices (BMP) Plan Requirements.

4/ See Part IV.B for Stormwater Measurement and Sampling Requirements.

5/ The facility should monitor for Bis (2-Ethylhexyl) Phthalate at this outfall once per quarter until there have been 4 consecutive below detection samples. Monitoring for this parameter at this outfall will no longer be required after 4 consecutive quarterly below detection monitoring results, unless otherwise notified by the Department. If monitoring is not applicable during a monitoring period, the parameter should be marked with "*9" on the discharge monitoring report.

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN0021: Process wastewater associated with silicon metal manufacturing and treated silica fume slurry discharging to U.T. to Miller Creek.

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Monthly Average	Daily Maximum	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency 2/	Sample Type	Seasonal
Oxygen, Dissolved (DO)	-	-	6.0 mg/l	-	-	Weekly	Grab	-
pH	-	-	6.0 S.U.	-	8.5 S.U.	Weekly	Grab	-
Solids, Total Suspended	-	-	-	30.0 mg/l	60.0 mg/l	Weekly	Composite	-
Oil & Grease	-	-	-	-	15.0 mg/l	Weekly	Grab	-
Nitrogen, Ammonia Total (As N)	-	-	-	0.4 mg/l	0.6 mg/l	Weekly	Composite	-
Selenium, Total Recoverable 3/	-	-	-	0.005 mg/l	0.020 mg/l	Weekly	Composite	-
Thallium, Total Recoverable 3/	-	-	-	0.274 ug/l	0.548 ug/l	Weekly	Composite	-
Lead, Total (As Pb)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ For the purpose of demonstration of compliance with this parameter, "Total" and "Total Recoverable" shall be considered equivalent.

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN0021 (continued): Process wastewater associated with silicon metal manufacturing and treated silica fume slurry to U.T. to Miller Creek.

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Monthly Average	Daily Maximum	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency 2/	Sample Type	Seasonal
Nickel, Total (As Ni)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-
Zinc Total Recoverable 3/	-	-	-	0.197 mg/l	0.197 mg/l	Weekly	Composite	-
Antimony, Total (As Sb)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-
Copper Total Recoverable 3/	-	-	-	0.0128 mg/l	0.0180 mg/l	Weekly	Composite	-
Arsenic, Trivalent Dissolved	-	-	-	0.303 ug/l	0.606 ug/l	Weekly	Composite	-
Flow, In Conduit or Thru Treatment Plant	REPORT MGD	REPORT MGD	-	-	-	Daily	Totalizer	-
BOD, Carbonaceous 05 Day, 20C	-	-	-	6.0 mg/l	9.0 mg/l	Weekly	Grab	-
Chemical Oxygen Demand (COD)	-	-	-	-	REPORT mg/l	Weekly	Grab	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ For the purpose of demonstration of compliance with this parameter, "Total" and "Total Recoverable" shall be considered equivalent.

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN002Q: Process wastewater associated with silicon metal manufacturing and treated silica fume slurry discharging to U.T. to Miller Creek.

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Monthly Average	Daily Maximum	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency 2/	Sample Type	Seasonal
Bis (2-Ethylhexyl) Phthalate 3/	-	-	-	1.28 ug/l	2.56 ug/l	Quarterly	Grab	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ The facility should monitor for Bis (2-Ethylhexyl) Phthalate at this outfall once per quarter until there have been 4 consecutive below detection samples. Monitoring for this parameter at this outfall will no longer be required after 4 consecutive quarterly below detection monitoring results, unless otherwise notified by the Department. If monitoring is not applicable during a monitoring period, the parameter should be marked with "*9" on the discharge monitoring report.

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN002T: Process wastewater associated with silicon metal manufacturing and treated silica fume slurry discharging to U.T. to Miller Creek. 3/

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Monthly Average	Daily Maximum	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency 2/	Sample Type	Seasonal
Toxicity, Ceriodaphnia Chronic	-	0 pass(0)/fail(1)	-	-	-	Quarterly	Composite	-
Toxicity, Pimephales Chronic	-	0 pass(0)/fail(1)	-	-	-	Quarterly	Composite	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ See Part IV.D for Chronic Toxicity Requirements.

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN003Q: Non-contact cooling wastewater associated with silicon metal manufacturing.

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Monthly Average	Daily Maximum	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency 2/	Sample Type	Seasonal
Temperature, Water Deg. Fahrenheit	-	-	-	-	90 F	Quarterly	Grab	-
pH	-	-	6.0 S.U.	-	8.5 S.U.	Quarterly	Grab	-
Flow, In Conduit or Thru Treatment Plant	-	REPORT MGD	-	-	-	Quarterly	Instantaneous	-
Chlorine, Total Residual 3/	-	-	-	0.011 mg/l	0.019 mg/l	Quarterly	Grab	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ A measurement of Total Residual Chlorine below 0.05 mg/L shall be considered in compliance with the permit limitations above and should be reported as NODI=B or *B on the discharge monitoring reports.

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN0041: Process wastewater and stormwater run-off associated with silicon metal manufacturing and treated silica fume slurry discharging to the Tallapoosa River. 3/

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Monthly Average	Daily Maximum	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency 2/	Sample Type	Seasonal
Oxygen, Dissolved (DO)	-	-	REPORT mg/l	-	-	Weekly	Grab	-
pH	-	-	6.0 S.U.	-	9.0 S.U.	Weekly	Grab	-
Solids, Total Suspended	-	-	-	30.0 mg/l	60.0 mg/l	Weekly	Composite	-
Oil & Grease	-	-	-	-	15.0 mg/l	Weekly	Grab	-
Nitrogen, Ammonia Total (As N)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-
Arsenic, Total (As As)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-
Copper, Total (As Cu)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-
Lead, Total (As Pb)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ See Part IV.A for Best Management Practices (BMP) Plan Requirements.

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN0041 (continued): Process wastewater and stormwater run-off associated with silicon metal manufacturing and treated silica fume slurry discharging to the Tallapoosa River. 3/

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Monthly Average	Daily Maximum	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency 2/	Sample Type	Seasonal
Thallium, Total (As Tl)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-
Nickel, Total (As Ni)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-
Zinc, Total (As Zn)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-
Antimony, Total (As Sb)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-
Selenium, Total (As Se)	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Composite	-
Flow, In Conduit or Thru Treatment Plant	REPORT MGD	REPORT MGD	-	-	-	Daily	Totalizer	-
BOD, Carbonaceous 05 Day, 20C	-	-	-	REPORT mg/l	REPORT mg/l	Weekly	Grab	-
Chemical Oxygen Demand (COD)	-	-	-	-	REPORT mg/l	Monthly	Grab	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ See Part IV.A for Best Management Practices (BMP) Plan Requirements.

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN004Q: Process wastewater and stormwater run-off associated with silicon metal manufacturing and treated silica fume slurry discharging to the Tallapoosa River.

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Monthly Average	Daily Maximum	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency 2/	Sample Type	Seasonal
Bis (2-Ethylhexyl) Phthalate 3/	-	-	-	-	REPORT ug/l	Quarterly	Grab	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ The facility should monitor for Bis (2-Ethylhexyl) Phthalate at this outfall once per quarter until there have been 4 consecutive below detection samples. Monitoring for this parameter at this outfall will no longer be required after 4 consecutive quarterly below detection monitoring results, unless otherwise notified by the Department. If monitoring is not applicable during a monitoring period, the parameter should be marked with "*9" on the discharge monitoring report.

During the period beginning on the effective date of this permit and lasting through the expiration date of this permit, the permittee is authorized to discharge from the following point source(s) outfall(s), described more fully in the permittee's application:

DSN004T: Process wastewater and stormwater run-off associated with silicon metal manufacturing and treated silica fume slurry discharging to the Tallapoosa River. 3/

Such discharge shall be limited and monitored by the permittee as specified below:

	DISCHARGE LIMITATIONS					MONITORING REQUIREMENTS 1/		
EFFLUENT CHARACTERISTIC	Monthly Average	Daily Maximum	Daily Minimum	Monthly Average	Daily Maximum	Measurement Frequency 2/	Sample Type	Seasonal
Toxicity, Ceriodaphnia Acute	-	0 pass(0)/fail(1)	-	-	-	Quarterly	Grab	-
Toxicity, Pimephales Acute	-	0 pass(0)/fail(1)	-	-	-	Quarterly	Grab	-

THE DISCHARGE SHALL HAVE NO SHEEN, AND THERE SHALL BE NO DISCHARGE OF VISIBLE OIL, FLOATING SOLIDS OR VISIBLE FOAM IN OTHER THAN TRACE AMOUNTS.

1/ Samples collected to comply with the monitoring requirements specified above shall be collected at the following location: At the nearest accessible location just prior to discharge and after final treatment. Unless otherwise specified, composite samples shall be time composite samples collected using automatic sampling equipment or a minimum of eight (8) equal volume grab samples collected over equal time intervals. All composite samples shall be collected for the total period of discharge not to exceed 24 hours.

2/ If only one sampling event occurs during a month, the sample result shall be reported on the discharge monitoring report as both the monthly average and daily maximum value for all parameters with a monthly average limitation.

3/ See Part IV.C for Acute Toxicity Requirements.

B. DISCHARGE MONITORING AND RECORD KEEPING REQUIREMENTS

1. Representative Sampling

Samples and measurements taken as required herein shall be representative of the volume and nature of the monitored discharge and shall be in accordance with the provisions of this permit.

2. Test Procedures

For the purpose of reporting and compliance, permittees shall use one of the following procedures:

a. For parameters with an EPA established Minimum Level (ML), report the measured value if the analytical result is at or above the ML and report "0" for values below the ML. Test procedures for the analysis of pollutants shall conform to 40 CFR Part 136 and guidelines published pursuant to Section 304(h) of the FWPCA, 33 U.S.C. Section 1314(h). If more than one method for analysis of a substance is approved for use, a method having a minimum level lower than the permit limit shall be used. If the minimum level of all methods is higher than the permit limit, the method having the lowest minimum level shall be used and a report of less than the minimum level shall be reported as zero and will constitute compliance; however, should EPA approve a method with a lower minimum level during the term of this permit the permittee shall use the newly approved method.

b. For pollutants parameters without an established ML, an interim ML may be utilized. The interim ML shall be calculated as 3.18 times the Method Detection Level (MDL) calculated pursuant to 40 CFR Part 136, Appendix B.

Permittees may develop an effluent matrix-specific ML, where an effluent matrix prevents attainment of the established ML. However, a matrix specific ML shall be based upon proper laboratory method and technique. Matrix-specific MLs must be approved by the Department, and may be developed by the permittee during permit issuance, reissuance, modification, or during compliance schedule.

In either case the measured value should be reported if the analytical result is at or above the ML and "0" reported for values below the ML.

c. For parameters without an EPA established ML, interim ML, or matrix-specific ML, a report of less than the detection limit shall constitute compliance if the detection limit of all analytical methods is higher than the permit limit using the most sensitive EPA approved method. For the purpose of calculating a monthly average, "0" shall be used for values reported less than the detection limit.

The Minimum Level utilized for procedures A and B above shall be reported on the permittee's DMR. When an EPA approved test procedure for analysis of a pollutant does not exist, the Director shall approve the procedure to be used.

3. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall record the following information:

a. The facility name and location, point source number, date, time and exact place of sampling;

b. The name(s) of person(s) who obtained the samples or measurements;

c. The dates and times the analyses were performed;

d. The name(s) of the person(s) who performed the analyses;

e. The analytical techniques or methods used, including source of method and method number; and

f. The results of all required analyses.

4. Records Retention and Production

The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by the permit, and records of all data used to complete the above reports or the application for this permit, for a period of at least three years from the date of the sample measurement, report or application. This period may be extended by request of the Director at any time. If litigation or other enforcement action, under the AWPCA and/or the FWPCA, is ongoing which involves any of the above records, the records shall be kept until the litigation is resolved. Upon the written request of the Director or his designee, the permittee shall provide the Director with a copy of any record required to be retained by this paragraph. Copies of these records shall not be submitted unless requested.

All records required to be kept for a period of three years shall be kept at the permitted facility or an alternate location approved by the Department in writing and shall be available for inspection.

5. Monitoring Equipment and Instrumentation

All equipment and instrumentation used to determine compliance with the requirements of this permit shall be installed, maintained, and calibrated in accordance with the manufacturer's instructions or, in the absence of manufacturer's instructions, in accordance with accepted practices. The permittee shall develop and maintain quality assurance procedures to ensure proper operation and maintenance of all equipment and instrumentation. The quality assurance procedures shall include the proper use, maintenance, and installation, when appropriate, of monitoring equipment at the plant site.

C. DISCHARGE REPORTING REQUIREMENTS

1. Reporting of Monitoring Requirements

a. The permittee shall conduct the required monitoring in accordance with the following schedule:

MONITORING REQUIRED MORE FREQUENTLY THAN MONTHLY AND MONTHLY shall be conducted during the first full month following the effective date of coverage under this permit and every month thereafter.

QUARTERLY MONITORING shall be conducted at least once during each calendar quarter. Calendar quarters are the periods of January through March, April through June, July through September, and October through December. The permittee shall conduct the quarterly monitoring during the first complete calendar quarter following the effective date of this permit and is then required to monitor once during each quarter thereafter. Quarterly monitoring may be done anytime during the quarter, unless restricted elsewhere in this permit, but it should be submitted with the last DMR due for the quarter, i.e., (March, June, September and December DMR's).

SEMIANNUAL MONITORING shall be conducted at least once during the period of January through June and at least once during the period of July through December. The permittee shall conduct the semiannual monitoring during the first complete calendar semiannual period following the effective date of this permit and is then required to monitor once during each semiannual period thereafter. Semiannual monitoring may be done anytime during the semiannual period, unless restricted elsewhere in this permit, but it should be submitted with the last DMR for the month of the semiannual period, i.e. (June and December DMR's).

ANNUAL MONITORING shall be conducted at least once during the period of January through December. The permittee shall conduct the annual monitoring during the first complete calendar annual period following the effective date of this permit and is then required to monitor once during each annual period thereafter. Annual monitoring may be done anytime during the year, unless restricted elsewhere in this permit, but it should be submitted with the December DMR.

b. The permittee shall submit discharge monitoring reports (DMRs) on the forms provided by the Department and in accordance with the following schedule:

REPORTS OF MORE FREQUENTLY THAN MONTHLY AND MONTHLY TESTING shall be submitted on a **monthly** basis. The first report is due on the **28th day of January, 2019.** The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period.

REPORTS OF QUARTERLY TESTING shall be submitted on a **quarterly** basis. The first report is due on the **28th day of April, 2019.** The reports shall be submitted so that they are received by the Department no later than the 28th day of the month following the reporting period.

c. Except as allowed by Provision I.C.1.c.(1) or (2), the permittee shall submit all Discharge Monitoring Reports (DMRs) required by Provision I.C.1.b by utilizing the Department's web-based Electronic Environmental (E2) Reporting System.

(1) If the permittee is unable to complete the electronic submittal of DMR data due to technical problems originating with the Department's E2 Reporting system (this could include entry/submittal issues with an entire set of DMRs or individual parameters), the permittee is not relieved of their obligation to submit DMR data to the Department by the date specified in Provision I.C.1.b, unless otherwise directed by the Department.

If the E2 Reporting System is down on the 28th day of the month in which the DMR is due or is down for an extended period of time, as determined by the Department, when a DMR is required to be submitted, the permittee may submit the data in an alternate manner and format acceptable to the Department. Preapproved alternate acceptable methods include faxing, e-mailing, mailing, or hand-delivery of data such that they are received by the required reporting date. Within 5 calendar days of the E2 Reporting System resuming operation, the permittee shall enter the data into the E2 Reporting System, unless an alternate timeframe is approved by the Department. An attachment should be included with the E2 DMR submittal verifying the

original submittal date (date of the fax, copy of the dated e-mail, or hand-delivery stamped date), if applicable.

(2) The permittee may submit a request to the Department for a temporary electronic reporting waiver for DMR submittals. The waiver request should include the permit number; permittee name; facility/site name; facility address; name, address, and contact information for the responsible official or duly authorized representative; a detailed statement regarding the basis for requesting such a waiver; and the duration for which the waiver is requested. Approved electronic reporting waivers are not transferrable.

Permittees with an approved electronic reporting waiver for DMRs may submit hard copy DMRs for the period that the approved electronic reporting waiver request is effective. The permittee shall submit the Department-approved DMR forms to the address listed in Provision I.C.1.e.

(3) If a permittee is allowed to submit a hard copy DMR, the DMR must be legible and bear an original signature. Photo and electronic copies of the signature are not acceptable and shall not satisfy the reporting requirements of this permit.

(4) If the permittee, using approved analytical methods as specified in Provision I.B.2, monitors any discharge from a point source for a limited substance identified in Provision I.A. of this permit more frequently than required by this permit, the results of such monitoring shall be included in the calculation and reporting of values on the DMR and the increased frequency shall be indicated on the DMR.

(5) In the event no discharge from a point source identified in Provision I.A. of this permit and described more fully in the permittee's application occurs during a monitoring period, the permittee shall report "No Discharge" for such period on the appropriate DMR.

d. All reports and forms required to be submitted by this permit, the AWPCA and the Department's Rules, shall be electronically signed (or, if allowed by the Department, traditionally signed) by a "responsible official" of the permittee as defined in ADEM Administrative Code Rule 335-6-6-.09 or a "duly authorized representative" of such official as defined in ADEM Administrative Code Rule 335-6-6-.09 and shall bear the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

e. Discharge Monitoring Reports required by this permit, the AWPCA, and the Department's Rules that are being submitted in hard copy shall be addressed to:

Alabama Department of Environmental Management
Permits and Services Division
Environmental Data Section
Post Office Box 301463
Montgomery, Alabama 36130-1463

Certified and Registered Mail containing Discharge Monitoring Reports shall be addressed to:

Alabama Department of Environmental Management
Permits and Services Division
Environmental Data Section
1400 Coliseum Boulevard
Montgomery, Alabama 36110-2400

f. All other correspondence and reports required to be submitted by this permit, the AWPCA, and the Department's Rules shall be addressed to:

Alabama Department of Environmental Management
Water Division
Post Office Box 301463
Montgomery, Alabama 36130-1463

Certified and Registered Mail shall be addressed to:

Alabama Department of Environmental Management
Water Division

g. If this permit is a re-issuance, then the permittee shall continue to submit DMRs in accordance with the requirements of their previous permit until such time as DMRs are due as discussed in Part I.C.1.b above.

2. Noncompliance Notification

a. 24-Hour Noncompliance Reporting

The permittee shall report to the Director, within 24-hours of becoming aware of the noncompliance, any noncompliance which may endanger health or the environment. This shall include but is not limited to the following circumstances:

(1) does not comply with any daily minimum or maximum discharge limitation for an effluent characteristic specified in Provision I. A. of this permit which is denoted by an "(X)";

(2) threatens human health or welfare, fish or aquatic life, or water quality standards;

(3) does not comply with an applicable toxic pollutant effluent standard or prohibition established under Section 307(a) of the FWPCA, 33 U.S.C. Section 1317(a);

(4) contains a quantity of a hazardous substance which has been determined may be harmful to public health or welfare under Section 311(b)(4) of the FWPCA, 33 U.S.C. Section 1321(b)(4);

(5) exceeds any discharge limitation for an effluent characteristic as a result of an unanticipated bypass or upset; and

(6) is an unpermitted direct or indirect discharge of a pollutant to a water of the state (unpermitted discharges properly reported to the Department under any other requirement are not required to be reported under this provision).

The permittee shall orally report the occurrence and circumstances of such discharge to the Director within 24-hours after the permittee becomes aware of the occurrence of such discharge. In addition to the oral report, the permittee shall submit to the Director or Designee a written report as provided in Part I.C.2.c no later than five (5) days after becoming aware of the occurrence of such discharge.

b. If for any reason, the permittee's discharge does not comply with any limitation of this permit, the permittee shall submit to the Director or Designee a written report as provided in Part I.C.2.c below, such report shall be submitted with the next Discharge Monitoring Report required to be submitted by Part I.C.1 of this permit after becoming aware of the occurrence of such noncompliance.

c. Any written report required to be submitted to the Director or Designee by Part I.C.2 a. or b. shall be submitted using a Noncompliance Notification Form (ADEM Form 421) available on the Department's website (http://adem.alabama.gov/DeptForms/Form421.pdf) and include the following information:

(1) A description of the discharge and cause of noncompliance;

(2) The period of noncompliance, including exact dates and times or, if not corrected, the anticipated time the noncompliance is expected to continue; and

(3) A description of the steps taken and/or being taken to reduce or eliminate the noncomplying discharge and to prevent its recurrence.

D. OTHER REPORTING AND NOTIFICATION REQUIREMENTS

1. Anticipated Noncompliance

The permittee shall give the Director written advance notice of any planned changes or other circumstances regarding a facility which may result in noncompliance with permit requirements.

2. Termination of Discharge

The permittee shall notify the Director, in writing, when all discharges from any point source(s) identified in Provision I. A. of this permit have permanently ceased. This notification shall serve as sufficient cause for instituting procedures for modification or termination of the permit.

3. Updating Information

   a. The permittee shall inform the Director of any change in the permittee's mailing address, telephone number or in the permittee's designation of a facility contact or office having the authority and responsibility to prevent and abate violations of the AWPCA, the Department's Rules, and the terms and conditions of this permit, in writing, no later than ten (10) days after such change. Upon request of the Director or his designee, the permittee shall furnish the Director with an update of any information provided in the permit application.

   b. If the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, it shall promptly submit such facts or information with a written explanation for the mistake and/or omission.

4. Duty to Provide Information

   The permittee shall furnish to the Director, within a reasonable time, any information which the Director or his designee may request to determine whether cause exists for modifying, revoking and re-issuing, suspending, or terminating this permit, in whole or in part, or to determine compliance with this permit.

5. Cooling Water and Boiler Water Additives

   a. The permittee shall notify the Director in writing not later than thirty (30) days prior to instituting the use of any biocide corrosion inhibitor or chemical additive in a cooling or boiler system, not identified in the application for this permit, from which discharge is allowed by this permit. Notification is not required for additives that do not contain a heavy metal(s) as an active ingredient and that pass through a wastewater treatment system prior to discharge nor is notification required for additives that should not reasonably be expected to cause the cooling water or boiler water to exhibit toxicity as determined by analysis of manufacturer's data or testing by the permittee. Such notification shall include:

      (1) name and general composition of biocide or chemical;

      (2) 96-hour median tolerance limit data for organisms representative of the biota of the waterway into which the discharge will ultimately reach;

      (2) quantities to be used;

      (3) frequencies of use;

      (4) proposed discharge concentrations; and

      (6) EPA registration number, if applicable.

   b. The use of a biocide or additive containing tributyl tin, tributyl tin oxide, zinc, chromium or related compounds in cooling or boiler system(s), from which a discharge regulated by this permit occurs, is prohibited except as exempted below. The use of a biocide or additive containing zinc, chromium or related compounds may be used in special circumstances if (1) the permit contains limits for these substances, or (2) the applicant demonstrates during the application process that the use of zinc, chromium or related compounds as a biocide or additive will not pose a reasonable potential to violate the applicable State water quality standards for these substances. The use of any additive, not identified in this permit or in the application for this permit or not exempted from notification under this permit is prohibited, prior to a determination by the Department that permit modification to control discharge of the additive is not required or prior to issuance of a permit modification controlling discharge of the additive.

6. Permit Issued Based On Estimated Characteristics

   a. If this permit was issued based on estimates of the characteristics of a process discharge reported on an EPA NPDES Application Form 2D (EPA Form 3510-2D), the permittee shall complete and submit an EPA NPDES Application Form 2C (EPA Form 3510-2C) no later than two years after the date that discharge begins. Sampling required for completion of the Form 2C shall occur when a discharge(s) from the process(s) causing the new or increased discharge is occurring. If this permit was issued based on estimates concerning the composition of a stormwater discharge(s), the permittee shall perform the sampling required by EPA NPDES Application Form 2F (EPA Form 3510-2F) no later than one year after the industrial activity generating the stormwater discharge has been fully initiated.

   b. This permit shall be reopened if required to address any new information resulting from the completion and submittal of the Form 2C and or 2F.

E. SCHEDULE OF COMPLIANCE

1. The permittee shall achieve compliance with the discharge limitations specified in Provision I. A. in accordance with the following schedule:

COMPLIANCE SHALL BE ATTAINED ON THE EFFECTIVE DATE OF THIS PERMIT

2. No later than 14 calendar days following a date identified in the above schedule of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by identified dates, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

PART II OTHER REQUIREMENTS, RESPONSIBILITIES, AND DUTIES

A. OPERATIONAL AND MANAGEMENT REQUIREMENTS

1. Facilities Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of the permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities only when necessary to achieve compliance with the conditions of the permit.

2. Best Management Practices

a. Dilution water shall not be added to achieve compliance with discharge limitations except when the Director or his designee has granted prior written authorization for dilution to meet water quality requirements.

b. The permittee shall prepare, implement, and maintain a Spill Prevention, Control and Countermeasures (SPCC) Plan in accordance with 40 C.F.R. Section 112 if required thereby.

c. The permittee shall prepare, submit for approval and implement a Best Management Practices (BMP) Plan for containment of any or all process liquids or solids, in a manner such that these materials do not present a significant potential for discharge, if so required by the Director or his designee. When submitted and approved, the BMP Plan shall become a part of this permit and all requirements of the BMP Plan shall become requirements of this permit.

3. Spill Prevention, Control, and Management

The permittee shall provide spill prevention, control, and/or management sufficient to prevent any spills of pollutants from entering a water of the state or a publicly or privately owned treatment works. Any containment system used to implement this requirement shall be constructed of materials compatible with the substance(s) contained and which shall prevent the contamination of groundwater and such containment system shall be capable of retaining a volume equal to 110 percent of the capacity of the largest tank for which containment is provided.

B. OTHER RESPONSIBILITIES

1. Duty to Mitigate Adverse Impacts

The permittee shall promptly take all reasonable steps to mitigate and minimize or prevent any adverse impact on human health or the environment resulting from noncompliance with any discharge limitation specified in Provision I. A. of this permit, including such accelerated or additional monitoring of the discharge and/or the receiving waterbody as necessary to determine the nature and impact of the noncomplying discharge.

2. Right of Entry and Inspection

The permittee shall allow the Director, or an authorized representative, upon the presentation of proper credentials and other documents as may be required by law to:

a. enter upon the permittee's premises where a regulated facility or activity or point source is located or conducted, or where records must be kept under the conditions of the permit;

b. have access to and copy, at reasonable times, any records that must be kept under the conditions of the permit;

c. inspect any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under the permit; and

d. sample or monitor, for the purposes of assuring permit compliance or as otherwise authorized by the AWPCA, any substances or parameters at any location.

C. BYPASS AND UPSET

1. Bypass

a. Any bypass is prohibited except as provided in b. and c. below:

b. A bypass is not prohibited if:

(1) It does not cause any discharge limitation specified in Provision I. A. of this permit to be exceeded;

(2) It enters the same receiving stream as the permitted outfall; and

(3) It is necessary for essential maintenance of a treatment or control facility or system to assure efficient operation of such facility or system.

c. A bypass is not prohibited and need not meet the discharge limitations specified in Provision I. A. of this permit if:

(1) It is unavoidable to prevent loss of life, personal injury, or severe property damage;

(2) There are no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime (this condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance); and

(3) The permittee submits a written request for authorization to bypass to the Director at least ten (10) days prior to the anticipated bypass (if possible), the permittee is granted such authorization, and the permittee complies with any conditions imposed by the Director to minimize any adverse impact on human health or the environment resulting from the bypass.

d. The permittee has the burden of establishing that each of the conditions of Provision II.C.1.b. or c. have been met to qualify for an exception to the general prohibition against bypassing contained in a. and an exemption, where applicable, from the discharge limitations specified in Provision I. A. of this permit.

2. Upset

a. A discharge which results from an upset need not meet the discharge limitations specified in Provision I. A. of this permit if:

(1) No later than 24-hours after becoming aware of the occurrence of the upset, the permittee orally reports the occurrence and circumstances of the upset to the Director or his designee; and

(2) No later than five (5) days after becoming aware of the occurrence of the upset, the permittee furnishes the Director with evidence, including properly signed, contemporaneous operating logs, or other relevant evidence, demonstrating that (i) an upset occurred; (ii) the permittee can identify the specific cause(s) of the upset; (iii) the permittee's facility was being properly operated at the time of the upset; and (iv) the permittee promptly took all reasonable steps to minimize any adverse impact on human health or the environment resulting from the upset.

b. The permittee has the burden of establishing that each of the conditions of Provision II. C.2.a. of this permit have been met to qualify for an exemption from the discharge limitations specified in Provision I.A. of this permit.

D. DUTY TO COMPLY WITH PERMIT, RULES, AND STATUTES

1. Duty to Comply

a. The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the AWPCA and the FWPCA and is grounds for enforcement action, for permit termination, revocation and reissuance, suspension, modification; or denial of a permit renewal application.

b. The necessity to halt or reduce production or other activities in order to maintain compliance with the conditions of the permit shall not be a defense for a permittee in an enforcement action.

c. The discharge of a pollutant from a source not specifically identified in the permit application for this permit and not specifically included in the description of an outfall in this permit is not authorized and shall constitute noncompliance with this permit.

d. The permittee shall take all reasonable steps, including cessation of production or other activities, to minimize or prevent any violation of this permit or to minimize or prevent any adverse impact of any permit violation.

e. Nothing in this permit shall be construed to preclude and negate the permittee's responsibility or liability to apply for, obtain, or comply with other ADEM, Federal, State, or Local Government permits, certifications, licenses, or other approvals.

2. Removed Substances

Solids, sludges, filter backwash, or any other pollutant or other waste removed in the course of treatment or control of wastewaters shall be disposed of in a manner that complies with all applicable Department Rules.

3. Loss or Failure of Treatment Facilities

Upon the loss or failure of any treatment facilities, including but not limited to the loss or failure of the primary source of power of the treatment facility, the permittee shall, where necessary to maintain compliance with the discharge limitations specified in Provision I. A. of this permit, or any other terms or conditions of this permit, cease, reduce, or otherwise control production and/or all discharges until treatment is restored. If control of discharge during loss or failure of the primary source of power is to be accomplished by means of alternate power sources, standby generators, or retention of inadequately treated effluent, the permittee must furnish to the Director within six months a certification that such control mechanisms have been installed.

4. Compliance with Statutes and Rules

a. This permit has been issued under ADEM Administrative Code, Chapter 335-6-6. All provisions of this chapter, that are applicable to this permit, are hereby made a part of this permit. A copy of this chapter may be obtained for a small charge from the Office of General Counsel, Alabama Department of Environmental Management, 1400 Coliseum Blvd., Montgomery, AL 36130.

b. This permit does not authorize the noncompliance with or violation of any Laws of the State of Alabama or the United States of America or any regulations or rules implementing such laws. FWPCA, 33 U.S.C. Section 1319, and Code of Alabama 1975, Section 22-22-14.

E. PERMIT TRANSFER, MODIFICATION, SUSPENSION, REVOCATION, AND REISSUANCE

1. Duty to Reapply or Notify of Intent to Cease Discharge

a. If the permittee intends to continue to discharge beyond the expiration date of this permit, the permittee shall file a complete permit application for reissuance of this permit at least 180 days prior to its expiration. If the permittee does not intend to continue discharge beyond the expiration of this permit, the permittee shall submit written notification of this intent which shall be signed by an individual meeting the signatory requirements for a permit application as set forth in ADEM Administrative Code Rule 335-6-6-.09.

b. Failure of the permittee to apply for reissuance at least 180 days prior to permit expiration will void the automatic continuation of the expiring permit provided by ADEM Administrative Code Rule 335-6-6-.06 and should the permit not be reissued for any reason any discharge after expiration of this permit will be an unpermitted discharge.

2. Change in Discharge

a. The permittee shall apply for a permit modification at least 180 days in advance of any facility expansion, production increase, process change, or other action that could result in the discharge of additional pollutants or increase the quantity of a discharged pollutant such that existing permit limitations would be exceeded or that could result in an additional discharge point. This requirement applies to pollutants that are or that are not subject to discharge limitations in this permit. No new or increased discharge may begin until the Director has authorized it by issuance of a permit modification or a reissued permit.

b. The permittee shall notify the Director as soon as it is known or there is reason to believe:

(1) That any activity has occurred or will occur which would result in the discharge on a routine or frequent basis, of any toxic pollutant which is not limited in this permit, if that discharge will exceed the highest of the following notification levels:

(a) one hundred micrograms per liter;

(b) two hundred micrograms per liter for acrolein and acrylonitrile; five hundred micrograms per liter for 2,4-dinitrophenol and for 2-methyl-4,6-dini-trophenol; and one milligram per liter for antimony;

(c) five times the maximum concentration value reported for that pollutant in the permit application; or

(2) That any activity has occurred or will occur which would result in any discharge, on a non-routine or infrequent basis, of a toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following notification levels:

(a) five hundred micrograms per liter;

(b) one milligram per liter for antimony;

(c) ten times the maximum concentration value reported for that pollutant in the permit application.

3. Transfer of Permit

This permit may not be transferred or the name of the permittee changed without notice to the Director and subsequent modification or revocation and reissuance of the permit to identify the new permittee and to incorporate any other changes as may be required under the FWPCA or AWPCA. In the case of a change in name, ownership or control of the permittee's premises only, a request for permit modification in a format acceptable to the Director is required at least 30 days prior to the change. In the case of a change in name, ownership or control of the permittee's premises accompanied by a change or proposed change in effluent characteristics, a complete permit application is required to be submitted to the Director at least 180 days prior to the change. Whenever the Director is notified of a change in name, ownership or control, he may decide not to modify the existing permit and require the submission of a new permit application.

4. Permit Modification and Revocation

a. This permit may be modified or revoked and reissued, in whole or in part, during its term for cause, including but not limited to, the following:

(1) If cause for termination under Provision II. E. 5. of this permit exists, the Director may choose to revoke and reissue this permit instead of terminating the permit;

(2) If a request to transfer this permit has been received, the Director may decide to revoke and reissue or to modify the permit; or

(3) If modification or revocation and reissuance is requested by the permittee and cause exists, the Director may grant the request.

b. This permit may be modified during its term for cause, including but not limited to, the following:

(1) If cause for termination under Provision II. E. 5. of this permit exists, the Director may choose to modify this permit instead of terminating this permit;

(2) There are material and substantial alterations or additions to the facility or activity generating wastewater which occurred after permit issuance which justify the application of permit conditions that are different or absent in the existing permit;

(3) The Director has received new information that was not available at the time of permit issuance and that would have justified the application of different permit conditions at the time of issuance;

(4) A new or revised requirement(s) of any applicable standard or limitation is promulgated under Sections 301(b)(2)(C), (D), (E), and (F), and 307(a)(2) of the FWPCA;

(5) Errors in calculation of discharge limitations or typographical or clerical errors were made;

(6) To the extent allowed by ADEM Administrative Code, Rule 335-6-6-.17, when the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued;

(7) To the extent allowed by ADEM Administrative Code, Rule 335-6-6-.17, permits may be modified to change compliance schedules;

(8) To agree with a granted variance under 30l(c), 30l(g), 30l(h), 30l(k), or 316(a) of the FWPCA or for fundamentally different factors;

(9) To incorporate an applicable 307(a) FWPCA toxic effluent standard or prohibition;

(10) When required by the reopener conditions in this permit;

(11) When required under 40 CFR 403.8(e) (compliance schedule for development of pretreatment program);

(12) Upon failure of the state to notify, as required by Section 402(b)(3) of the FWPCA, another state whose waters may be affected by a discharge permitted by this permit;

(13) When required to correct technical mistakes, such as errors in calculation, or mistaken interpretations of law made in determining permit conditions; or

(14) When requested by the permittee and the Director determines that the modification has cause and will not result in a violation of federal or state law, regulations or rules.

5. Permit Termination

This permit may be terminated during its term for cause, including but not limited to, the following:

a. Violation of any term or condition of this permit;

b. The permittee's misrepresentation or failure to disclose fully all relevant facts in the permit application or during the permit issuance process or the permittee's misrepresentation of any relevant facts at any time;

c. Materially false or inaccurate statements or information in the permit application or the permit;

d. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;

e. The permittee's discharge threatens human life or welfare or the maintenance of water quality standards;

f. Permanent closure of the facility generating the wastewater permitted to be discharged by this permit or permanent cessation of wastewater discharge;

g. New or revised requirements of any applicable standard or limitation that is promulgated under Sections 301(b)(2)(C), (D), (E), and (F), and 307(a)(2) of the FWPCA that the Director determines cannot be complied with by the permittee; or

h. Any other cause allowed by the ADEM Administrative Code, Chapter 335-6-6.

6. Permit Suspension

This permit may be suspended during its term for noncompliance until the permittee has taken action(s) necessary to achieve compliance.

7. Request for Permit Action Does Not Stay Any Permit Requirement

The filing of a request by the permittee for modification, suspension or revocation of this permit, in whole or in part, does not stay any permit term or condition.

F. COMPLIANCE WITH TOXIC POLLUTANT STANDARD OR PROHIBITION

If any applicable effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the FWPCA, 33 U.S.C. Section 1317(a), for a toxic pollutant discharged by the permittee and such standard or prohibition is more stringent than any discharge limitation on the pollutant specified in Provision I. A. of this permit, or controls a pollutant not limited in Provision I. A. of this permit, this permit shall be modified to conform to the toxic pollutant effluent standard or prohibition and the permittee shall be notified of such modification. If this permit has not been modified to conform to the toxic pollutant effluent standard or prohibition before the effective date of such standard or prohibition, the permittee shall attain compliance with the requirements of the standard or prohibition within the time period required by the standard or prohibition and shall continue to comply with the standard or prohibition until this permit is modified or reissued.

G. DISCHARGE OF WASTEWATER GENERATED BY OTHERS

The discharge of wastewater, generated by any process, facility, or by any other means not under the operational control of the permittee or not identified in the application for this permit or not identified specifically in the description of an outfall in this permit is not authorized by this permit.

PART III OTHER PERMIT CONDITIONS

A. CIVIL AND CRIMINAL LIABILITY

1. Tampering

Any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained or performed under the permit shall, upon conviction, be subject to penalties as provided by the AWPCA.

2. False Statements

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be subject to penalties as provided by the AWPCA.

3. Permit Enforcement

a. Any NPDES permit issued or reissued by the Department is a permit for the purpose of the AWPCA and the FWPCA and as such any terms, conditions, or limitations of the permit are enforceable under state and federal law.

b. Any person required to have a NPDES permit pursuant to ADEM Administrative Code Chapter 335-6-6 and who discharges pollutants without said permit, who violates the conditions of said permit, who discharges pollutants in a manner not authorized by the permit, or who violates applicable orders of the Department or any applicable rule or standard of the Department, is subject to any one or combination of the following enforcement actions under applicable state statutes.

(1) An administrative order requiring abatement, compliance, mitigation, cessation, clean-up, and/or penalties;

(2) An action for damages;

(3) An action for injunctive relief; or

(4) An action for penalties.

c. If the permittee is not in compliance with the conditions of an expiring or expired permit the Director may choose to do any or all of the following provided the permittee has made a timely and complete application for reissuance of the permit:

(1) initiate enforcement action based upon the permit which has been continued;

(2) issue a notice of intent to deny the permit reissuance. If the permit is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operating without a permit;

(3) reissue the new permit with appropriate conditions; or

(4) take other actions authorized by these rules and AWPCA.

4. Relief from Liability

Except as provided in Provision II.C.1 (Bypass) and Provision II.C.2 (Upset), nothing in this permit shall be construed to relieve the permittee of civil or criminal liability under the AWPCA or FWPCA for noncompliance with any term or condition of this permit.

B. OIL AND HAZARDOUS SUBSTANCE LIABILITY

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the FWPCA, 33 U.S.C. Section 1321.

C. PROPERTY AND OTHER RIGHTS

This permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to persons or property or invasion of other private rights, trespass, or any infringement of federal, state, or local laws or regulations, nor does it authorize or approve the construction of any physical structures or facilities or the undertaking of any work in any waters of the state or of the United States.

D. AVAILABILITY OF REPORTS

Except for data determined to be confidential under Code of Alabama 1975, Section 22-22-9(c), all reports prepared in accordance with the terms of this permit shall be available for public inspection at the offices of the Department. Effluent data shall not be considered confidential.

E. EXPIRATION OF PERMITS FOR NEW OR INCREASED DISCHARGES

1. If this permit was issued for a new discharger or new source, this permit shall expire eighteen months after the issuance date if construction of the facility has not begun during the eighteen-month period.

2. If this permit was issued or modified to allow the discharge of increased quantities of pollutants to accommodate the modification of an existing facility and if construction of this modification has not begun during the eighteen month period after issuance of this permit or permit modification, this permit shall be modified to reduce the quantities of pollutants allowed to be discharged to those levels that would have been allowed if the modification of the facility had not been planned.

3. Construction has begun when the owner or operator has:

   a. begun, or caused to begin as part of a continuous on-site construction program:

      (1) any placement, assembly, or installation of facilities or equipment; or

      (2) significant site preparation work including clearing, excavation, or removal of existing buildings, structures, or facilities which is necessary for the placement, assembly, or installation of new source facilities or equipment; or

   b. entered into a binding contractual obligation for the purpose of placement, assembly, or installation of facilities or equipment which are intended to be used in its operation within a reasonable time. Options to purchase or contracts which can be terminated or modified without substantial loss, and contracts for feasibility, engineering, and design studies do not constitute a contractual obligation under the paragraph. The entering into a lease with the State of Alabama for exploration and production of hydrocarbons shall also be considered beginning construction.

F. COMPLIANCE WITH WATER QUALITY STANDARDS

1. On the basis of the permittee's application, plans, or other available information, the Department has determined that compliance with the terms and conditions of this permit should assure compliance with the applicable water quality standards.

2. Compliance with permit terms and conditions notwithstanding, if the permittee's discharge(s) from point sources identified in Provision I. A. of this permit cause or contribute to a condition in contravention of state water quality standards, the Department may require abatement action to be taken by the permittee in emergency situations or modify the permit pursuant to the Department's Rules, or both.

3. If the Department determines, on the basis of a notice provided pursuant to this permit or any investigation, inspection or sampling, that a modification of this permit is necessary to assure maintenance of water quality standards or compliance with other provisions of the AWPCA or FWPCA, the Department may require such modification and, in cases of emergency, the Director may prohibit the discharge until the permit has been modified.

G. GROUNDWATER

Unless specifically authorized under this permit, this permit does not authorize the discharge of pollutants to groundwater. Should a threat of groundwater contamination occur, the Director may require groundwater monitoring to properly assess the degree of the problem and the Director may require that the Permittee undertake measures to abate any such discharge and/or contamination.

H. DEFINITIONS

1. Average monthly discharge limitation - means the highest allowable average of "daily discharges" over a calendar month, calculated as the sum of all "daily discharges" measured during a calendar month divided by the number of "daily discharges" measured during that month (zero discharge days shall not be included in the number of "daily discharges" measured and a less than detectable test result shall be treated as a concentration of zero if the most sensitive EPA approved method was used).

2. Average weekly discharge limitation - means the highest allowable average of "daily discharges" over a calendar week, calculated as the sum of all "daily discharges" measured during a calendar week divided by the number of "daily discharges" measured during that week (zero discharge days shall not be included in the number of "daily discharges" measured and a less than detectable test result shall be treated as a concentration of zero if the most sensitive EPA approved method was used).

3. Arithmetic Mean – means the summation of the individual values of any set of values divided by the number of individual values.

4. AWPCA - means the Alabama Water Pollution Control Act.

5. BOD – means the five-day measure of the pollutant parameter biochemical oxygen demand.

6. Bypass - means the intentional diversion of waste streams from any portion of a treatment facility.

7. CBOD – means the five-day measure of the pollutant parameter carbonaceous biochemical oxygen demand.

8. Daily discharge - means the discharge of a pollutant measured during any consecutive 24-hour period in accordance with the sample type and analytical methodology specified by the discharge permit.

9. Daily maximum - means the highest value of any individual sample result obtained during a day.

10. Daily minimum - means the lowest value of any individual sample result obtained during a day.

11. Day - means any consecutive 24-hour period.

12. Department - means the Alabama Department of Environmental Management.

13. Director - means the Director of the Department.

14. Discharge - means "[t]he addition, introduction, leaking, spilling or emitting of any sewage, industrial waste, pollutant or other wastes into waters of the state". Code of Alabama 1975, Section 22-22-1(b)(8).

15. Discharge Monitoring Report (DMR) - means the form approved by the Director to accomplish reporting requirements of an NPDES permit.

16. DO – means dissolved oxygen.

17. 8HC – means 8-hour composite sample, including any of the following:

    a. The mixing of at least 5 equal volume samples collected at constant time intervals of not more than 2 hours over a period of not less than 8 hours between the hours of 6:00 a.m. and 6:00 p.m. If the sampling period exceeds 8 hours, sampling may be conducted beyond the 6:00 a.m. to 6:00 p.m. period.

    b. A sample continuously collected at a constant rate over period of not less than 8 hours between the hours of 6:00 a.m. and 6:00 p.m. If the sampling period exceeds 8 hours, sampling may be conducted beyond the 6:00 a.m. to 6:00 p.m. period.

18. EPA - means the United States Environmental Protection Agency.

19. FC – means the pollutant parameter fecal coliform.

20. Flow – means the total volume of discharge in a 24-hour period.

21. FWPCA - means the Federal Water Pollution Control Act.

22. Geometric Mean – means the Nth root of the product of the individual values of any set of values where N is equal to the number of individual values. The geometric mean is equivalent to the antilog of the arithmetic mean of the logarithms of the individual values. For purposes of calculating the geometric mean, values of zero (0) shall be considered one (1).

23. Grab Sample – means a single influent or effluent portion which is not a composite sample. The sample(s) shall be collected at the period(s) most representative of the discharge.

24. Indirect Discharger – means a nondomestic discharger who discharges pollutants to a publicly owned treatment works or a privately owned treatment facility operated by another person.

25. Industrial User – means those industries identified in the Standard Industrial Classification manual, Bureau of the Budget 1967, as amended and supplemented, under the category "Division D – Manufacturing" and such other classes of significant waste producers as, by regulation, the Director deems appropriate.

26. MGD – means million gallons per day.

27. Monthly Average – means, other than for fecal coliform bacteria, the arithmetic mean of the entire composite or grab samples taken for the daily discharges collected in one month period. The monthly average for fecal coliform bacteria is the geometric mean of daily discharge samples collected in a one month period. The monthly average for flow is the arithmetic mean of all flow measurements taken in a one month period.

28. New Discharger – means a person, owning or operating any building, structure, facility or installation:

    a. from which there is or may be a discharge of pollutants;

    b. that did not commence the discharge of pollutants prior to August 13, 1979, and which is not a new source; and

    c. which has never received a final effective NPDES permit for dischargers at that site.

29. NH3-N – means the pollutant parameter ammonia, measured as nitrogen.

30. Permit application - means forms and additional information that is required by ADEM Administrative Code Rule 335-6-6-.08 and applicable permit fees.

31. Point source - means "any discernible, confined and discrete conveyance, including but not limited to any pipe, channel, ditch, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, . . . from which pollutants are or may be discharged." Section 502(14) of the FWPCA, 33 U.S.C. Section 1362(14).

32. Pollutant - includes for purposes of this permit, but is not limited to, those pollutants specified in Code of Alabama 1975, Section 22-22-1(b)(3) and those effluent characteristics specified in Provision I. A. of this permit.

33. Privately Owned Treatment Works – means any devices or system which is used to treat wastes from any facility whose operator is not the operator of the treatment works, and which is not a "POTW".

34. Publicly Owned Treatment Works – means a wastewater collection and treatment facility owned by the State, municipality, regional entity composed of two or more municipalities, or another entity created by the State or local authority for the purpose of collecting and treating municipal wastewater.

35. Receiving Stream – means the "waters" receiving a "discharge" from a "point source".

36. Severe property damage - means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production.

37. Significant Source – means a source which discharges 0.025 MGD or more to a POTW or greater than five percent of the treatment work's capacity, or a source which is a primary industry as defined by the U.S. EPA or which discharges a priority or toxic pollutant.

38. Solvent – means any virgin, used or spent organic solvent(s) identified in the F-Listed wastes (F001 through F005) specified in 40 CFR 261.31 that is used for the purpose of solubilizing other materials.

39. TKN – means the pollutant parameter Total Kjeldahl Nitrogen.

40. TON – means the pollutant parameter Total Organic Nitrogen.

41. TRC – means Total Residual Chlorine.

42. TSS – means the pollutant parameter Total Suspended Solids.

43. 24HC – means 24-hour composite sample, including any of the following:

    a. the mixing of at least 12 equal volume samples collected at constant time intervals of not more than 2 hours over a period of 24 hours;

    b. a sample collected over a consecutive 24-hour period using an automatic sampler composite to one sample. As a minimum, samples shall be collected hourly and each shall be no more than one twenty-fourth (1/24) of the total sample volume collected; or

    c. a sample collected over a consecutive 24-hour period using an automatic composite sampler composited proportional to flow.

44. Upset - means an exceptional incident in which there is an unintentional and temporary noncompliance with technology-based permit discharge limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

45. Waters - means "[a]ll waters of any river, stream, watercourse, pond, lake, coastal, ground or surface water, wholly or partially within the state, natural or artificial. This does not include waters which are entirely confined and retained completely upon the property of a single individual, partnership or corporation unless such waters are used in interstate commerce." Code of Alabama 1975, Section 22-22-1(b)(2). Waters "include all navigable waters" as defined in Section 502(7) of the FWPCA, 22 U.S.C. Section 1362(7), which are within the State of Alabama.

46. Week - means the period beginning at twelve midnight Saturday and ending at twelve midnight the following Saturday.

47. Weekly (7-day and calendar week) Average – is the arithmetic mean of all samples collected during a consecutive 7-day period or calendar week, whichever is applicable. The calendar week is defined as beginning on Sunday and ending on Saturday. Weekly averages shall be calculated for all calendar weeks with Saturdays in the month. If a calendar week overlaps two months (i.e., the Sunday is in one month and the Saturday in the following month), the weekly average calculated for the calendar week shall be included in the data for the month that contains the Saturday.

I. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

PART IV ADDITIONAL REQUIREMENTS, CONDITIONS, AND LIMITATIONS

A. BEST MANAGEMENT PRACTICES (BMP) PLAN REQUIREMENTS

1. BMP Plan

The permittee shall develop and implement a Best Management Practices (BMP) Plan which prevents, or minimizes the potential for, the release of pollutants from ancillary activities, including material storage areas; plant site runoff; in-plant transfer, process and material handling areas; loading and unloading operations, and sludge and waste disposal areas, to the waters of the State through plant site runoff; spillage or leaks; sludge or waste disposal; or drainage from raw material storage.

2. Plan Content

The permittee shall prepare and implement a best management practices (BMP) plan, which shall:

a. Establish specific objectives for the control of pollutants:

(1) Each facility component or system shall be examined for its potential for causing a release of significant amounts of pollutants to waters of the State due to equipment failure, improper operation, natural phenomena such as rain or snowfall, etc.

(2) Where experience indicates a reasonable potential for equipment failure (e.g., a tank overflow or leakage), natural condition (e.g. precipitation), or circumstances to result in significant amounts of pollutants reaching surface waters, the plan should include a prediction of the direction, rate of flow, and total quantity of pollutants which could be discharged from the facility as a result of each condition or circumstance.

b. Establish specific best management practices to meet the objectives identified under paragraph a. of this section, addressing each component or system capable of causing a release of significant amounts of pollutants to the waters of the State, and identifying specific preventative or remedial measures to be implemented;

c. Establish a program to identify and repair leaking equipment items and damaged containment structures, which may contribute to contaminated stormwater runoff. This program must include regular visual inspections of equipment, containment structures and of the facility in general to ensure that the BMP is continually implemented and effective;

d. Prevent the spillage or loss of fluids, oil, grease, gasoline, etc. from vehicle and equipment maintenance activities and thereby prevent the contamination of stormwater from these substances;

e. Prevent or minimize stormwater contact with material stored on site;

f. Designate by position or name the person or persons responsible for the day to day implementation of the BMP;

g. Provide for routine inspections, on days during which the facility is manned, of any structures that function to prevent stormwater pollution or to remove pollutants from stormwater and of the facility in general to ensure that the BMP is continually implemented and effective;

h. Provide for the use and disposal of any material used to absorb spilled fluids that could contaminate stormwater;

i. Develop a solvent management plan, if solvents are used on site. The solvent management plan shall include as a minimum lists of the solvents on site; the disposal method of solvents used instead of dumping, such as reclamation, contract hauling; and the procedures for assuring that solvents do not routinely spill or leak into the stormwater;

j. Provide for the disposal of all used oils, hydraulic fluids, solvent degreasing material, etc. in accordance with good management practices and any applicable state or federal regulations;

k. Include a diagram of the facility showing the locations where stormwater exits the facility, the locations of any structure or other mechanisms intended to prevent pollution of stormwater or to remove pollutants from stormwater, the locations of any collection and handling systems;

l. Provide control sufficient to prevent or control pollution of stormwater by soil particles to the degree required to maintain compliance with the water quality standard for turbidity applicable to the waterbody(s) receiving discharge(s) under this permit;

m. Provide spill prevention, control, and/or management sufficient to prevent or minimize contaminated stormwater runoff. Any containment system used to implement this requirement shall be constructed of materials compatible with the substance(s) contained and shall prevent the contamination of groundwater. The containment system shall also be

capable of retaining a volume equal to 110 percent of the capacity of the largest tank for which containment is provided;

n. Provide and maintain curbing, diking or other means of isolating process areas to the extent necessary to allow segregation and collection for treatment of contaminated stormwater from process areas;

o. Be reviewed by plant engineering staff and the plant manager; and

p. Bear the signature of the plant manager.

3. Compliance Schedule

The permittee shall have reviewed (and revised if necessary) and fully implemented the BMP plan as soon as practicable but no later than six months after the effective date of this permit.

4. Department Review

a. When requested by the Director or his designee, the permittee shall make the BMP available for Department review.

b. The Director or his designee may notify the permittee at any time that the BMP is deficient and require correction of the deficiency.

c. The permittee shall correct any BMP deficiency identified by the Director or his designee within 30 days of receipt of notification and shall certify to the Department that the correction has been made and implemented.

5. Administrative Procedures

a. A copy of the BMP shall be maintained at the facility and shall be available for inspection by representatives of the Department.

b. A log of the routine inspection required above shall be maintained at the facility and shall be available for inspection by representatives of the Department. The log shall contain records of all inspections performed for the last three years and each entry shall be signed by the person performing the inspection.

c. The permittee shall provide training for any personnel required to implement the BMP and shall retain documentation of such training at the facility. This documentation shall be available for inspection by representatives of the Department. Training shall be performed prior to the date that implementation of the BMP is required.

d. BMP Plan Modification. The permittee shall amend the BMP plan whenever there is a change in the facility or change in operation of the facility which materially increases the potential for the ancillary activities to result in a discharge of significant amounts of pollutants.

e. BMP Plan Review. The permittee shall complete a review and evaluation of the BMP plan at least once every three years from the date of preparation of the BMP plan. Documentation of the BMP Plan review and evaluation shall be signed and dated by the Plant Manager.

B. STORMWATER FLOW MEASUREMENT AND SAMPLING REQUIREMENTS

1. Stormwater Flow Measurement

a. All stormwater samples shall be collected from the discharge resulting from a storm event that is greater than 0.1 inches.

b. The total volume of stormwater discharged for the event must be monitored, including the date and duration (in hours) and rainfall (in inches) for storm event(s) sampled. The duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event must be a minimum of 72 hours. This information must be recorded as part of the sampling procedure and records retained according to Part I.B. of this permit.

c. The volume may be measured using flow measuring devices, or estimated based on a modification of the Rational Method using total depth of rainfall, the size of the drainage area serving a stormwater outfall, and an estimate of the runoff coefficient of the drainage area. This information must be recorded as part of the sampling procedure and records retained according to Part I.B. of this permit.

2. Stormwater Sampling

   a. A grab sample, if required by this permit, shall be taken during the first thirty minutes of the discharge (or as soon thereafter as practicable); and a flow-weighted composite sample, if required by this permit, shall be taken for the entire event or for the first three hours of the event.

   b. All test procedures will be in accordance with part I.B. of this permit.

C. ACUTE TOXICITY LIMITATIONS AND BIOMONITORING REQUIREMENTS (DSN004)

1. The permittee shall perform 48-hour acute toxicity screening tests on the wastewater discharges required to be tested for acute toxicity by Part I of this permit.

   a. Test Requirements:

      (1) The tests shall be diluted using an appropriate control water, to the Instream Waste Concentration (IWC) which is 1% effluent. The IWC is the actual concentration of effluent, after mixing, in the receiving stream during a 1-day, 10-year flow period.

      (2) Any test where survival in the effluent concentration is less than 90% and statistically lower than the control indicates acute toxicity and constitutes noncompliance with this permit.

   b. General Test Requirements:

      (1) A **grab** sample shall be obtained for use in above biomonitoring tests. The holding time for each sample shall not exceed 36 hours. The control water shall be a water prepared in the laboratory in accordance with the EPA procedure described in EPA 821-R-02-012 or most current edition or another control water selected by the permittee and approved by the Department.

      (2) Effluent toxicity tests in which the control survival is less than 90% or in which the other requirements of the EPA Test Procedure are not met shall be unacceptable and the permittee shall rerun the tests as soon as practical within the monitoring period.

      (3) In the event of an invalid test, upon subsequent completion of a valid test, the results of all tests, valid and invalid, are reported with an explanation of the tests performed and results.

   c. Reporting Requirements:

      (1) The permittee shall notify the Department in writing within 48 hours after toxicity has been demonstrated by the scheduled test(s).

      (2) Biomonitoring test results obtained during each monitoring period shall be summarized and reported using the appropriate Discharge Monitoring Report (DMR) form approved by the Department. In accordance with Section 2. of this part, an effluent toxicity report containing the information in Section 2. shall be included with the DMR. Two copies of the test results must be submitted to the Department no later than 28 days after the monitoring period in which the tests were performed.

   d. Additional Testing Requirements:

      (1) If acute toxicity is indicated (noncompliance with permit limit), the permittee shall perform four additional valid acute toxicity tests in accordance with these procedures to determine the extent and duration of the toxic condition. The toxicity tests shall be performed once per week and shall be performed during the first four calendar weeks following the date on which the permittee became aware of the permit noncompliance and the results of these tests shall be submitted no later than 28 days following the month in which the tests were performed.

      (2) After evaluation of the results of the follow-up tests, the Department will determine if additional action is appropriate and may require additional testing and/or toxicity reduction measures. The permittee may be required to perform a Toxicity Identification Evaluation (TIE) and/or a Toxicity Reduction Evaluation (TRE). The TIE/TRE shall be performed in accordance with the most recent protocols/guidance outlined by EPA (e.g., EPA/600/2-88/062, EPA/600/R-92/080, EPA/600/R-92/081, EPA/833/B-99/022 and/or EPA/600/6-91/005F, etc.).

   e. Test Methods:

(1) The tests shall be performed in accordance with the latest edition of the "EPA Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" and shall be performed using the fathead minnow (*Pimephales promelas*) and the cladoceran (*Ceriodaphnia dubia*).

2. Effluent Toxicity Testing Reports

The following information shall be submitted with each discharge monitoring report unless otherwise directed by the Department. The Department may at any time suspend or reinstate this requirement or may increase or decrease the frequency of submittals.

a. Introduction

(1) Facility Name, location and county
(2) Permit number
(3) Toxicity testing requirements of permit
(4) Name of receiving water body
(5) Contract laboratory information (if tests are performed under contract)
  (a) Name of firm
  (b) Telephone number
  (c) Address
(6) Objective of test

b. Plant Operations

(1) Discharge operating schedule (if other than continuous)
(2) Volume of discharge during sample collection to include Mean daily discharge on sample collection date (MGD, CFS, GPM)
(3) Design flow of treatment facility at time of sampling

c. Source of Effluent and Dilution Water

(1) Effluent samples

  (a) Sampling point
  (b) Sample collection dates and times (to include composite sample start and finish times)
  (c) Sample collection method
  (d) Physical and chemical data of undiluted effluent samples (water temperature, pH, alkalinity, hardness, specific conductance, total residual chlorine (if applicable), etc.)
  (e) Sample temperature when received at the laboratory
  (f) Lapsed time from sample collection to delivery
  (g) Lapsed time from sample collection to test initiation

(2) Dilution Water Samples

  (a) Source
  (b) Collection date(s) and time(s) (where applicable)
  (c) Pretreatment
  (d) Physical and chemical characteristics (pH, hardness, water temperature, alkalinity, specific conductance, etc.)

d. Test Conditions

(1) Toxicity test method utilized
(2) End point(s) of test
(3) Deviations from referenced method, if any, and reason(s)
(4) Date and time test started
(5) Date and time test terminated
(6) Type and volume of test chambers
(7) Volume of solution per chamber
(8) Number of organisms per test chamber
(9) Number of replicate test chambers per treatment
(10) Test temperature, pH and dissolved oxygen as recommended by the method (to include ranges)

(11) Feeding frequency, and amount and type of food
(12) Light intensity (mean)

e. Test Organisms

(1) Scientific name
(2) Life stage and age
(3) Source
(4) Disease treatment (if applicable)

f. Quality Assurance

(1) Reference toxicant utilized and source
(2) Date and time of most recent acute reference toxicant test(s), raw data, and current cusum chart(s)
(3) Dilution water utilized in reference toxicant test
(4) Results of reference toxicant test(s) (LC50, etc.), report concentration-response relationship and evaluate test sensitivity. The most recent reference toxicant test shall be conducted within 30-days of the routine.
(5) Physical and chemical methods utilized

g. Results

(1) Provide raw toxicity data in tabular form, including daily records of affected organisms in each concentration (including controls) and replicate
(2) Provide table of endpoints: LC50, NOAEC, Pass/Fail (as required in the applicable NPDES permit)
(3) Indicate statistical methods used to calculate endpoints
(4) Provide all physical and chemical data required by method
(5) Results of test(s) (LC50, NOAEC, Pass/Fail, etc.), report concentration-response relationship **(definitive test only)**, report percent minimum significant difference (PMSD)

h. Conclusions and Recommendations

(1) Relationship between test endpoints and permit limits
(2) Action to be taken

1/ Adapted from "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms", Fifth Edition, October 2002 (EPA 821-R-02-012), Section 12, Report Preparation

D. CHRONIC TOXICITY LIMITATIONS AND BIOMONITORING REQUIREMENTS (DSN002)

1. The permittee shall perform short-term chronic toxicity tests on the wastewater discharges required to be tested for chronic toxicity by Part I of this permit.

a. Test Requirements

(1) The tests shall be performed using undiluted effluent.

(2) Any test result that shows a statistically significant reduction in survival, growth, or reproduction between the control and the test at the 95% confidence level indicate chronic toxicity and constitute noncompliance with this permit.

b. General Test Requirements

(1) A minimum of three (3) 24-hour composite samples shall be obtained for use in the above biomonitoring tests and collected every other day so that the laboratory receives water samples on the first, third, and fifth day of the seven-day test period. The holding time for each composite sample shall not exceed 36 hours. The control water shall be a water prepared in the laboratory in accordance with the EPA procedure described in EPA 821-R-02-013 or the most current edition or another control water selected by the permittee and approved by the Department.

(2) Effluent toxicity tests in which the control survival is less than 80%, P. promelas dry weight per surviving control organism is less than 0.25 mg, Ceriodaphnia number of young per surviving control organism is less than 15, Ceriodaphnia reproduction where less than 60% of surviving control females produce three broods

or in which the other requirements of the EPA Test Procedure are not met shall be unacceptable and the permittee shall rerun the tests as soon as practical within the monitoring period.

(3) In the event of an invalid test, upon subsequent completion of a valid test, the results of all tests, valid and invalid, are reported with an explanation of the tests performed and results.

c. Reporting Requirements

(1) The permittee shall notify the Department in writing within 48 hours after toxicity has been demonstrated by the scheduled test(s).

(2) Biomonitoring test results obtained during each monitoring period shall be summarized and reported using the appropriate Discharge Monitoring Report (DMR) form approved by the Department. In accordance with Section 2 of this part, an effluent toxicity report containing the information in Section 2 shall be included with the DMR. Two copies of the test results must be submitted to the Department no later than 28 days after the monitoring period in which the tests were performed.

d. Additional Testing Requirements

(1) If chronic toxicity is indicated (noncompliance with permit limit), the permittee shall perform two additional valid chronic toxicity tests in accordance with these procedures to determine the extent and duration of the toxic condition. The toxicity tests shall run consecutively beginning on the first calendar week following the date on which the permittee became aware of the permit noncompliance and the results of these tests shall be submitted no later than 28 days following the month in which the tests were performed.

(2) After evaluation of the results of the follow-up tests, the Department will determine if additional action is appropriate and may require additional testing and/or toxicity reduction measures. The permittee may be required to perform a Toxicity Identification Evaluation (TIE) and/or a Toxicity Reduction Evaluation (TRE). The TIE/TRE shall be performed in accordance with the most recent protocols/guidance outlined by EPA (e.g., EPA/600/2-88/062, EPA/600/R-92/080, EPA/600/R-91-003, EPA/600/R-92/081, EPA/833/B-99/022 and/or EPA/600/6-91/005F, etc.)

e. Test Methods

(1) The tests shall be performed in accordance with the latest edition of the "EPA Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Water to Freshwater Organisms". The Larval Survival and Growth Test, Methods 1000.0, shall be used for the fathead minnow (*Pimephales promelas*) test and the Survival and Reproduction Test, Method 1002.0, shall be used for the cladoceran (*Ceriodaphnia dubia*) test.

2. Effluent Toxicity Testing Reports

The following information shall be submitted with each discharge monitoring report unless otherwise directed by the Department. The Department may at any time suspend or reinstate these requirements or may decrease or increase the frequency of submittals.

a. Introduction

(1) Facility name, location, and county
(2) Permit number
(3) Toxicity testing requirements of permit
(4) Name of receiving water body
(5) Contract laboratory information (if tests are performed under contract)
  (a) Name of firm
  (b) Telephone number
  (c) Address
(6) Objective of test

b. Plant Operation

(1) Discharge Operating schedule (if other than continuous)
(2) Volume of discharge during sample collection to include Mean daily discharge on sample collection dates (MGD, CFS, GPM)
(3) Design flow of treatment facility at time of sampling

c. Source of Effluent and Dilution Water

(1) Effluent samples

(a) Sampling point
(b) Sample collection dates and times (to include composite sample start and finish times)
(c) Sample collection method
(d) Physical and chemical data of undiluted effluent samples (water temperature, pH, alkalinity, hardness, specific conductance, total residual chlorine (if applicable), etc.)
(e) Sample temperature when received at the laboratory
(f) Lapsed time from sample collection to delivery
(g) Lapsed time from sample collection to test initiation

(2) Dilution Water Samples

(a) Source
(b) Collection date(s) and time(s) (where applicable)
(c) Pretreatment
(d) Physical and chemical characteristics (pH, hardness, water temperature, alkalinity, specific conductance, etc.)

d. Test Conditions

(1) Toxicity test method utilized
(2) End point(s) of test
(3) Deviations from referenced method, if any, and reason(s)
(4) Date and time test started
(5) Date and time test terminated
(6) Type and volume of test chambers
(7) Volume of solution per chamber
(8) Number of organisms per test chamber
(9) Number of replicate test chambers per treatment
(10) Test temperature, pH, and dissolved oxygen as recommended by the method (to include ranges)
(11) Specify if aeration was needed
(12) Feeding frequency, amount, and type of food
(13) Specify if (and how) pH control measures were implemented
(14) Light intensity (mean)

e. Test Organisms

(1) Scientific name
(2) Life stage and age
(3) Source
(4) Disease(s) treatment (if applicable)

f. Quality Assurance

(1) Reference toxicant utilized and source
(2) Date and time of most recent chronic reference toxicant test(s), raw data and current control chart(s). The most recent chronic reference toxicant test shall be conducted within 30 days of the routine.
(3) Dilution water utilized in reference toxicant test
(4) Results of reference toxicant test(s) (NOEC, IC25, PASS/FAIL, etc.), report concentration response relationship and evaluate test sensitivity
(5) Physical and chemical methods utilized

g. Results

(1) Provide raw toxicity data in tabular form, including daily records of affected organisms in each concentration (including controls) and replicate
(2) Provide table of endpoints: NOECs, IC25s, PASS/FAIL, etc. (as required in the applicable NPDES permit)
(3) Indicate statistical methods used to calculate endpoints
(4) Provide all physical and chemical data required by method

(5) Results of test(s) (NOEC, IC25, PASS/FAIL, etc.), report concentration-response relationship (definitive test only), report percent minimum significant difference (PMSD) calculated for sub-lethal endpoints determined by hypothesis testing.

h. Conclusions and Recommendations

(1) Relationship between test endpoints and permit limits
(2) Actions to be taken

i. Conclusions and Recommendations

(1) Relationship between test endpoints and permit limits
(2) Actions to be taken

1/ Adapted from "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms", Fourth Edition, October 2002 (EPA 821-R-02-013), Section 10, Report Preparation

E. COOLING WATER INTAKE REQUIREMENTS

1. The entity providing water to the permittee is a public water system in accordance with Section 1401 of the Safe Drinking Water Act; therefore, the permittee is exempt from the requirements of this permit condition.

ADEM PERMIT RATIONALE

PREPARED DATE: July 8, 2019
REVISION DATE: December 3, 2019
REVISION DATE: February 19, 2020
REVISION DATE: September 8, 2020
REVISION DATE: November 30, 2020
REVISION DATE: March 30, 2021
PREPARED BY: Scott Jackson

Permittee Name: DC Alabama, Inc.

Facility Name: DC Alabama, Inc.

Permit Number: AL0083763

PERMIT IS MODIFICATION

DISCHARGE SERIAL NUMBERS & DESCRIPTIONS:

DSN001: Uncontaminated groundwater and stormwater run-off associated with silicon metal manufacturing.

DSN002: Process wastewater associated with silicon metal manufacturing and treated silica fume slurry discharging to U.T. to Miller Creek.

DSN003: Non-contact cooling wastewater associated with silicon metal manufacturing

DSN004: Process wastewater and stormwater run-off associated with silicon metal manufacturing and treated silica fume slurry discharging to the Tallapoosa River.

INDUSTRIAL CATEGORY: NON-CATEGORICAL

MAJOR: N

STREAM INFORMATION (DSN001, DSN002, DSN003):

Receiving Stream:	Unnamed Tributary to Miller Creek
Classification:	Fish & Wildlife
River Basin:	Tallapoosa
7Q10:	0 cfs
7Q2:	0 cfs
1Q10:	0 cfs
Annual Average Flow:	0 cfs
303(d) List:	NO
Impairment:	N/A
TMDL:	NO

STREAM INFORMATION (DSN004):

Receiving Stream:	Tallapoosa River
Classification:	Public Water Supply
River Basin:	Tallapoosa
7Q10:	627.97 cfs
7Q2:	797.24 cfs
1Q10:	470.98 cfs
Annual Average Flow:	5881.82 cfs
303(d) List:	NO
Impairment:	N/A
TMDL:	NO

DISCUSSION:

DC Alabama, Inc. produces silicon metal used in chemical and aluminum products. The facility also produces micro silica (fume) which is used as a strengthener and filler by concrete and refractory industries. The manufacturing processes includes melting raw materials (quartz rock, coal, charcoal, wood chips) in an electric arc furnace to produce molten silicon metal which is cast as ingots. The ingots are crushed before being packaged to be shipped.

Based on the modified permit application, DC Alabama, Inc. is requesting the NPDES Permit be modified to include the addition of stormwater discharges through Outfall DSN004 to the Tallapoosa River. The source of this stormwater is from the facility's industrial process area and routing of the treated stormwater to the outfall. There are no other modifications being made to this permit. All monitoring and reporting requirements will be continued.

ADEM Administrative Rule 335-6-10-.12 requires applicants to new or expanded discharges to Tier II waters demonstrate that the proposed discharge is necessary for important economic or social development in the area in which the waters are located. The application submitted by the facility is for a new discharge and the anti-degradation rationale is attached.

December 3, 2019 Revision

The Department completed a reasonable potential analysis (RPA) of the discharge based on laboratory data provided in the Permittee's application and groundwater data submitted to the Department by the facility (see attached). The RPA indicates whether pollutants in treated effluent have the potential to contribute to excursions of Alabama's in-stream water quality standards. Based on the data submitted by the facility, it appears that there is a reasonable potential and resulting limitation for Bis (2-Ethylhexyl) Phthalate in the discharge to the Unnamed Tributary to Miller Creek (DSN002). Monitoring for Bis (2-Ethylhexyl) Phthalate is also being proposed at Outfalls DSN001 and DSN004 due to the repeated occurrence of this parameter in sampling of various groundwater monitoring wells around the site as indicated in data submitted by the facility. Bis (2-Ethylhexyl) Phthalate is being proposed to be monitored at a quarterly frequency at all outfalls. The information gathered from the permittee's monitoring will be useful in determining the levels being discharged and to determine future permit limitations, if necessary.

February 19, 2020 Revision

The facility submitted comments on the Revised Draft Permit Modification (sent December 3, 2019) to the Department on January 31, 2020. As a result of these comments, Permit Condition Part IV.C.1.c.(2) has been updated to clarify reporting requirements for the biomonitoring test results. Previously, this section required the Permittee to submit test results no later than 28 days after the **month** in which the tests were performed. The Permittee is only required to submit the test results quarterly and no later than the 28th day of the month following that monitoring period. To be consistent with other conditions of the permit, the last sentence of this permit condition will now read: "Two copies of the test results must be submitted to the Department no later than 28 days

after the **monitoring period** in which the tests were performed." In addition, Permit Condition Part IV.D.1.c.(2) has also been updated similarly to remain consistent with other conditions of the permit.

The facility has requested that ADEM suspend the requirement to submit the toxicity testing information as listed in Permit Condition Part IV.C.2. The information outlined in Permit Condition Part IV.C.2 is necessary in determining compliance with all toxicity limitations and biomonitoring requirements. The facility will be required to continue to submit this information to the Department with each DMR.

September 8, 2020 Revision

The facility notified the Department on February 14, 2020 about an underdrain system that would be needed for the new stormwater retention basin. The facility determined this system was necessary to prevent damage to the basin and requested this groundwater be discharged to the stormwater drainage channel which eventually discharges through Outfall DSN001. The facility submitted laboratory results of a sample of the water in this underdrain system to the Department on July 14, 2020 (see attached). The results appear to show that the groundwater collected by the underdrain system is uncontaminated from operations onsite. Based on these discussions with the facility and the laboratory results, the description of Outfall DSN001 is being updated to include uncontaminated groundwater. There does not appear to be any new pollutants introduced that would be discharged in significant amounts based on the submitted data. All monitoring and reporting requirements for Outfall DSN001 will be continued.

November 30, 2020 Revision

The facility submitted comments on the Revised Draft Permit Modification (sent October 2, 2020) to the Department on November 18, 2020. The facility has requested that limitations and monitoring requirements for Bis (2-Ethylhexyl) Phthalate (DEHP) at Outfalls DSN001, DSN002, and DSN004 be removed from the permit. The facility has provided supporting documentation including additional facility background information, peer-reviewed technical papers which have been published and indicate the difficulty in analyzing DEHP in laboratories, and guidance on false detections in groundwater samples from monitoring wells.

A reasonable potential analysis (RPA) showed the possibility for DEHP to cause a violation of water quality standards; however, the additional documentation submitted by the facility shows that DEHP is not present in the discharge and instead is a laboratory contaminant, which is a common occurrence with this pollutant. Therefore, based on the documentation provided by the facility, the limitations and monitoring requirements for DEHP at Outfalls DSN001, DSN002, and DSN004 will be removed from the permit.

March 30, 2021 Revision

The Department has determined based on internal discussions and reviewing all available data submitted by the facility, that Bis (2-Ethylhexyl) Phthalate is proposed to be monitored in this permit modification. The Department completed a reasonable potential analysis (RPA) of the discharge based on the laboratory data provided by the facility. The RPA indicates whether pollutants in treated effluent have the potential to contribute to excursions of Alabama's in-stream water quality standards. Based on the data submitted by the facility, it appears that there is a reasonable potential and resulting limitation for Bis (2-Ethylhexyl) Phthalate in the discharge to the Unnamed Tributary to Miller Creek (DSN002). Monitoring for Bis (2-Ethylhexyl) Phthalate is also being proposed at Outfalls DSN001 and DSN004 due to the repeated occurrence of this parameter in sampling of various groundwater monitoring wells around the site as indicated in data submitted by the facility.

The facility is required to monitor for Bis (2-Ethylhexyl) Phthalate at outfalls DSN001, DSN002, and DSN004 until there have been 4 consecutive below detection sampling results. If the facility has four below detection results at one of the outfalls but not another, then monitoring would still be required at the other outfall(s) until 4 consecutive below detection results are reported for the specific outfall(s). A footnote has been added to the Pages 2, 5, and 10 of the permit to clarify monitoring and reporting requirements for Bis (2-Ethylhexyl) Phthalate at each outfall.

001Q: Uncontaminated groundwater and stormwater run-off associated with silicon metal manufacturing

Parameter	Monthly Avg Loading	Daily Max Loading	Daily Min Concentration	Monthly Avg Concentration	Daily Max Concentration	Sample Frequency	Sample Type	Basis*
pH	-	-	REPORT S.U.	-	REPORT S.U.	Quarterly	Grab	BPJ
Solids, Total Suspended	-	-	-	REPORT mg/l	REPORT mg/l	Quarterly	Grab	BPJ
Oil & Grease	-	-	-	-	15.0 mg/l	Quarterly	Grab	BPJ
Arsenic, Total (As As)	-	-	-	-	REPORT mg/l	Quarterly	Grab	BPJ
Chromium, Total (As Cr)	-	-	-	-	REPORT mg/l	Quarterly	Grab	BPJ
Copper, Total (As Cu)	-	-	-	-	REPORT mg/l	Quarterly	Grab	BPJ
Lead, Total (As Pb)	-	-	-	-	REPORT mg/l	Quarterly	Grab	BPJ
Nickel, Total (As Ni)	-	-	-	-	REPORT mg/l	Quarterly	Grab	BPJ
Aluminum, Total (As Al)	-	-	-	-	REPORT mg/l	Quarterly	Grab	BPJ
Selenium, Total (As Se)	-	-	-	-	REPORT mg/l	Quarterly	Grab	BPJ
Bis (2-Ethylhexyl) Phthalate	-	-	-	-	REPORT ug/l	Quarterly	Grab	BPJ
Flow, In Conduit or Thru Treatment Plant	REPORT MGD	REPORT MGD	-	-	-	Quarterly	Instantaneous	BPJ
Solids, Total Dissolved	-	-	-	-	REPORT mg/l	Quarterly	Grab	BPJ

002Q: Process wastewater associated with silicon metal manufacturing and treated silica fume slurry discharging to U.T. to Miller Creek.

Parameter	Monthly Avg Loading	Daily Max Loading	Daily Min Concentration	Monthly Avg Concentration	Daily Max Concentration	Sample Frequency	Sample Type	Basis*
Bis (2-Ethylhexyl) Phthalate	-	-	-	1.28 ug/l	2.56 ug/l	Quarterly	Grab	WQBEL/BPJ

004Q: Process wastewater and stormwater run-off associated with silicon metal manufacturing and treated silica fume slurry discharging to the Tallapoosa River.

Parameter	Monthly Avg Loading	Daily Max Loading	Daily Min Concentration	Monthly Avg Concentration	Daily Max Concentration	Sample Frequency	Sample Type	Basis*
Bis (2-Ethylhexyl) Phthalate	-	-	-	-	REPORT ug/l	Quarterly	Grab	BPJ

*Basis for Permit Limitation

- BPJ – Best Professional Judgment
- WQBEL – Water Quality Based Effluent Limits
- EGL – Federal Effluent Guideline Limitations
- 303(d) – 303(d) List of Impaired Waters
- TMDL – Total Maximum Daily Load Requirements

Facility Name: **DC Alabama, Inc. (UT to Miller Creek)**

NPDES No: **AL0083763**

$$Q_d * C_d + Q_{d2} * C_{d2} + Q_s * C_s = Q_r * C_r$$

ID	Pollutant	Carcinogen "yes"	Type	Background from upstream source (C_{d1}) Daily Max (ug/l)	Background from upstream source (C_{d2}) Monthly Ave. (ug/l)	Background Instream (C_s) Daily Max (ug/l)	Background Instream (C_s) Monthly Ave. (ug/l)	Enter Max Daily Discharge as reported by Applicant (C_d) Max (ug/l)	Enter Avg. Daily Discharge as reported by Applicant (C_d) Ave. (ug/l)	Partition Coefficient (Stream / Lake)
1	Antimony		Metals	0	0	0	0	0	0	-
2	**Arsenic*,****	YES	Metals	0	0	0	0	0	0	0.674
3	Beryllium		Metals	0	0	0	0	0	0	-
4	Cadmium**		Metals	0	0	0	0	0	0	0.236
5	Chromium / Chromium III**		Metals	0	0	0	0	0	0	0.210
6	Chromium / Chromium VI**		Metals	0	0	0	0	0	0	-
7	Copper**		Metals	0	0	0	0	0	0	0.366
8	Lead**		Metals	0	0	0	0	0	0	0.205
9	Mercury**		Metals	0	0	0	0	0	0	0.302
10	Nickel**		Metals	0	0	0	0	0	0	0.505
11	Selenium		Metals	0	0	0	0	0	0	-
12	Silver		Metals	0	0	0	0	0	0	-
13	Thallium		Metals	0	0	0	0	0	0	-
14	Zinc**		Metals	0	0	0	0	0	0	0.330
15	Cyanide		Metals	0	0	0	0	0	0	-
16	Total Phenolic Compounds		Metals	0	0	0	0	0	0	-
17	Hardness (As CaCO3)		Metals	0	0	0	0	0	0	-
18	Acrolein		VOC	0	0	0	0	0	0	-
19	**Acrylonitrile***	YES	VOC	0	0	0	0	0	0	-
20	**Aldrin**	YES	VOC	0	0	0	0	0	0	-
21	**Benzene***	YES	VOC	0	0	0	0	0	0	-
22	**Bromoform***	YES	VOC	0	0	0	0	0	0	-
23	**Carbon Tetrachloride***	YES	VOC	0	0	0	0	0	0	-
24	**Chlordane**	YES	VOC	0	0	0	0	0	0	-
25	Clorobenzene		VOC	0	0	0	0	0	0	-
26	**Chlorodibromo-Methane***	YES	VOC	0	0	0	0	0	0	-
27	Chloroethane		VOC	0	0	0	0	0	0	-
28	2-Chloro-Ethylvinyl Ether		VOC	0	0	0	0	0	0	-
29	**Chloroform***	YES	VOC	0	0	0	0	0	0	-
30	**4,4'-DBD**	YES	VOC	0	0	0	0	0	0	-
31	**4,4'-DDE**	YES	VOC	0	0	0	0	0	0	-
32	**4,4'-DDT**	YES	VOC	0	0	0	0	0	0	-
33	**Dichlorobromo-Methane***	YES	VOC	0	0	0	0	0	0	-
34	1, 1-Dichloroethane		VOC	0	0	0	0	0	0	-
35	**1, 2-Dichloroethane***	YES	VOC	0	0	0	0	0	0	-
36	Trans-1, 2-Dichloro-Ethylene		VOC	0	0	0	0	0	0	-
37	**1, 1-Dichloroethylene***	YES	VOC	0	0	0	0	0	0	-
38	1, 2-Dichloropropane		VOC	0	0	0	0	0	0	-
39	1, 3-Dichloro-Propylene		VOC	0	0	0	0	0	0	-
40	**Dieldrin**	YES	VOC	0	0	0	0	0	0	-
41	Ethylbenzene		VOC	0	0	0	0	0	0	-
42	Methyl Bromide		VOC	0	0	0	0	0	0	-
43	Methyl Chloride		VOC	0	0	0	0	0	0	-
44	**Methylene Chloride***	YES	VOC	0	0	0	0	0	0	-
45	**1, 1, 2, 2-Tetrachloro-Ethane***	YES	VOC	0	0	0	0	0	0	-
46	**Tetrachloro-Ethylene***	YES	VOC	0	0	0	0	0	0	-
47	Toluene		VOC	0	0	0	0	0	0	-
48	**Toxaphene**	YES	VOC	0	0	0	0	0	0	-
49	**Tributyltins (TBT)**	YES	VOC	0	0	0	0	0	0	-
50	1, 1, 1-Trichloroethane		VOC	0	0	0	0	0	0	-
51	**1, 1, 2-Trichloroethane***	YES	VOC	0	0	0	0	0	0	-
52	**Trichloroethylene***	YES	VOC	0	0	0	0	0	0	-
53	**Vinyl Chloride***	YES	VOC	0	0	0	0	0	0	-
54	P-Chloro-M-Cresol		Acids	0	0	0	0	0	0	-
55	2-Chlorophenol		Acids	0	0	0	0	0	0	-
56	2, 4-Dichlorophenol		Acids	0	0	0	0	0	0	-
57	2, 4-Dimethylphenol		Acids	0	0	0	0	0	0	-
58	4, 6-Dinitro-O-Cresol		Acids	0	0	0	0	0	0	-
59	2, 4-Dinitrophenol		Acids	0	0	0	0	0	0	-
60	**4,6-Dinitro-2-methylphenol**	YES	Acids	0	0	0	0	0	0	-
61	**Dioxin (2,3,7,8-TCDD)**	YES	Acids	0	0	0	0	0	0	-
62	2-Nitrophenol		Acids	0	0	0	0	0	0	-
63	4-Nitrophenol		Acids	0	0	0	0	0	0	-
64	**Pentachlorophenol***	YES	Acids	0	0	0	0	0	0	-
65	Phenol		Acids	0	0	0	0	0	0	-
66	**2, 4, 6-Trichlorophenol***	YES	Acids	0	0	0	0	0	0	-
67	Acenaphthene		Bases	0	0	0	0	0	0	-
68	Acenaphthylene		Bases	0	0	0	0	0	0	-
69	Anthracene		Bases	0	0	0	0	0	0	-
70	Benzidine		Bases	0	0	0	0	0	0	-
71	**Benzo(A)Anthracene***	YES	Bases	0	0	0	0	0	0	-
72	**Benzo(A)Pyrene***	YES	Bases	0	0	0	0	0	0	-
73	3, 4 Benzo-Fluoranthene		Bases	0	0	0	0	0	0	-
74	Benzo(Ghi)Perylene		Bases	0	0	0	0	0	0	-
75	Benzo(K)Fluoranthene		Bases	0	0	0	0	0	0	-
76	Bis (2-Chloroethoxy) Methane		Bases	0	0	0	0	0	0	-
77	**Bis (2-Chloroethyl)-Ether***	YES	Bases	0	0	0	0	0	0	-
78	Bis (2-Chloroiso-Propyl) Ether		Bases	0	0	0	0	0	0	-
79	**Bis (2-Ethylhexyl) Phthalate***	YES	Bases	0	0	0	0	28	28	-
80	4-Bromophenyl Phenyl Ether		Bases	0	0	0	0	0	0	-
81	Butyl Benzyl Phthalate		Bases	0	0	0	0	0	0	-
82	2-Chloronaphthalene		Bases	0	0	0	0	0	0	-
83	4-Chlorophenyl Phenyl Ether		Bases	0	0	0	0	0	0	-
84	**Chrysene***	YES	Bases	0	0	0	0	0	0	-
85	Di-N-Butyl Phthalate		Bases	0	0	0	0	0	0	-
86	Di-N-Octyl Phthalate		Bases	0	0	0	0	0	0	-
87	**Dibenzo(A,H)Anthracene***	YES	Bases	0	0	0	0	0	0	-
88	1, 2-Dichlorobenzene		Bases	0	0	0	0	0	0	-
89	1, 3-Dichlorobenzene		Bases	0	0	0	0	0	0	-
90	1, 4-Dichlorobenzene		Bases	0	0	0	0	0	0	-
91	**3, 3-Dichlorobenzidine***	YES	Bases	0	0	0	0	0	0	-
92	Diethyl Phthalate		Bases	0	0	0	0	0	0	-
93	Dimethyl Phthalate		Bases	0	0	0	0	0	0	-
94	**2, 4-Dinitrotoluene***	YES	Bases	0	0	0	0	0	0	-
95	2, 6-Dinitrotoluene		Bases	0	0	0	0	0	0	-
96	1,2-Diphenylhydrazine		Bases	0	0	0	0	0	0	-
97	**Endosulfan (alpha)**	YES	Bases	0	0	0	0	0	0	-
98	**Endosulfan (beta)**	YES	Bases	0	0	0	0	0	0	-
99	**Endosulfan sulfate**	YES	Bases	0	0	0	0	0	0	-
100	**Endrin**	YES	Bases	0	0	0	0	0	0	-
101	**Endrin Aldeyhide**	YES	Bases	0	0	0	0	0	0	-
102	Fluoranthene		Bases	0	0	0	0	0	0	-
103	Fluorene		Bases	0	0	0	0	0	0	-
104	Heptachlor	YES	Bases	0	0	0	0	0	0	-
105	Heptachlor Epoxide	YES	Bases	0	0	0	0	0	0	-
106	**Hexachlorobenzene***	YES	Bases	0	0	0	0	0	0	-
107	**Hexachlorobutadiene***	YES	Bases	0	0	0	0	0	0	-
108	**Hexachlorocyclohexan (alpa)**	YES	Bases	0	0	0	0	0	0	-
109	**Hexachlorocyclohexan (beta)**	YES	Bases	0	0	0	0	0	0	-
110	**Hexachlorocyclohexan (gamma)**	YES	Bases	0	0	0	0	0	0	-
111	HexachlorocycloPentadiene		Bases	0	0	0	0	0	0	-
112	Hexachloroethane		Bases	0	0	0	0	0	0	-
113	**Indeno(1, 2, 3-CD)Pyrene***	YES	Bases	0	0	0	0	0	0	-
114	Isophorone		Bases	0	0	0	0	0	0	-
115	Naphthalene		Bases	0	0	0	0	0	0	-
116	Nitrobenzene		Bases	0	0	0	0	0	0	-
117	**N-Nitrosodi-N-Propylamine***	YES	Bases	0	0	0	0	0	0	-
118	**N-Nitrosodi-N-Methylamine***	YES	Bases	0	0	0	0	0	0	-
119	**N-Nitrosodi-N-Phenylamine***	YES	Bases	0	0	0	0	0	0	-
120	**PCB-1016**	YES	Bases	0	0	0	0	0	0	-
121	**PCB-1221**	YES	Bases	0	0	0	0	0	0	-
122	**PCB-1232**	YES	Bases	0	0	0	0	0	0	-
123	**PCB-1242**	YES	Bases	0	0	0	0	0	0	-
124	**PCB-1248**	YES	Bases	0	0	0	0	0	0	-
125	**PCB-1254**	YES	Bases	0	0	0	0	0	0	-
126	**PCB-1260**	YES	Bases	0	0	0	0	0	0	-
127	Phenanthrene		Bases	0	0	0	0	0	0	-
128	Pyrene		Bases	0	0	0	0	0	0	-
129	1, 2, 4-Trichlorobenzene		Bases	0	0	0	0	0	0	-

0.2	Enter Q_d = wastewater discharge flow from facility (MGD)
0.3094458	Q_s = wastewater discharge flow (cfs) (this value is calculated from the MGD)
0	Enter flow from upstream discharge Qd2 = background stream flow in MGD above point of discharge
0	Qd2 = background stream flow from upstream source (cfs)
0	Enter 7Q10. Q_s = background stream flow in cfs above point of discharge
0	Enter or estimated, 1Q10, Q_s = background stream flow in cfs above point of discharge (1Q10 estimated at 75% of 7Q10)
0	Enter Mean Annual Flow. Q_s = background stream flow in cfs above point of discharge
	Enter 7Q2. Q_s = background stream flow in cfs above point of discharge (For LWF class streams)
Enter to Left	Enter C_s = background in-stream pollutant concentration in µg/l (assuming this is zero "0" unless there is data)
Q_s +Qd2+Q_d	Q_r = resultant in-stream flow, after discharge
Calculated on other	C_r = resultant in-stream pollutant concentration in µg/l in the stream (after complete mixing occurs)
50	Enter. Background Hardness above point of discharge (assumed 50 South of Birmingham and 100 North of Birmingham)
7.08 s.u.	Enter. Background pH above point of discharge
YES	Enter. Is discharge to a stream? "YES" Other option would be to a Lake. (This changes the partition coefficients for the metals)

** Using Partition Coefficients

December 3, 2015

Facility Name: DC Alabama, Inc. (UT to Miller Creek)

NPDES No.: AL0063762

					Freshwater P&W classification				Max Daily Discharge as reported by Applicant (C_{max})	Freshwater Acute (µg/l) Q_s = 1010					Avg Daily Discharge as reported by Applicant (C_{avg})	Freshwater Chronic (µg/l) Q_s = 7010				Human Health Consumption Fish only (µg/l)			
																				Carcinogen Q_s = Annual Average Non-Carcinogen Q_s = 7010			
ID	Pollutant	RP?	Carcinogen yes	Background from upstream source (CdC) Daily Max						Water Quality Criteria (C)	Draft Permit Limit (C_{max})	20% of Draft Permit Limit	RP?	Background from upstream source (CdC) Monthly Ave		Water Quality Criteria (C)	Draft Permit Limit (C_{max})	20% of Draft Permit Limit	RP?	Water Quality Criteria (C)	Draft Permit Limit (C_{max})	20% of Draft Permit Limit	RP?
1	Antimony			0		0								0									
2	Arsenic		YES	0		0	340.334	340.334	119.467	Yes	0	0			0	201.324	201.324	52.285	Yes	3.73E+02	3.73E+02	7.42E+01	No
3	Beryllium			0		0	-	-	-	-	0	0			0	-	-	-	-	3.03E-01	3.03E-01	6.06E-02	No
4	Cadmium			0		0	6.347	6.347	0.800	No	0	0			0	0.644	0.644	0.128	No	-	-	-	-
5	Chromium, Chromium III			0		0	1537.913	1537.913	307.583	No	0	0			0	200.051	200.051	40.010	No	-	-	-	-
6	Chromium, Chromium VI			0		0	16.030	16.030	3.206	No	0	0			0	11.000	11.000	2.200	No	-	-	-	-
7	Copper			0		0	18.028	18.028	3.605	No	0	0			0	12.766	12.766	2.553	No	-	-	-	-
8	Lead			0		0	148.291	148.291	29.258	No	0	0			0	5.701	5.701	1.140	No	-	-	-	-
9	Mercury			0		0	2.400	2.400	0.480	No	0	0			0	0.012	0.012	0.002	No	4.24E-03	4.24E-02	8.48E-03	No
10	Nickel			0		0	513.824	513.824	103.165	No	0	0			0	57.292	57.292	11.458	No	9.83E+02	9.83E+02	1.95E+02	No
11	Selenium			0		0	20.000	20.000	4.000	No	0	0			0	5.000	5.000	1.000	No	2.45E+03	2.45E+03	4.86E+02	No
12	Silver			0		0	0.978	0.978	0.195	No	0	0			0	-	-	-	-	-	-	-	-
13	Thallium			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
14	Zinc			0		0	197.309	197.309	39.474	No	0	0			0	198.983	198.983	39.797	No	2.74E-01	2.74E-01	5.47E-02	No
15	Cyanide			0		0	22.000	22.000	4.400	No	0	0			0	5.200	5.200	1.040	No	1.45E+04	1.45E+04	2.90E+03	No
16	Total Phenolic Compounds			0		0	-	-	-	-	0	0			0	-	-	-	-	8.33E+03	8.33E+03	1.67E+03	No
17	Hardness (As CaCO3)			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
18	Acrolein			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
19	Acrylonitrile		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	5.43E+00	5.43E+00	1.09E+00	No
20	Aldrin		YES	0		0	3.000	3.000	0.600	No	0	0			0	-	-	-	-	1.44E-01	1.44E-01	2.88E-02	No
21	Benzene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	2.94E-05	2.94E-05	5.88E-06	No
22	Bromoform		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.33E+01	1.33E+01	3.00E+00	No
23	Carbon Tetrachloride		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	7.26E+01	7.26E+01	1.50E+01	No
24	Chlordane		YES	0		0	2.400	2.400	0.480	No	0	0			0	0.0043	0.004	0.001	No	9.57E-01	9.57E-01	1.91E-01	No
25	Chlorobenzene			0		0	-	-	-	-	0	0			0	-	-	-	-	4.73E-04	4.73E-04	9.46E-05	No
26	Chlorodibromo-Methane		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	9.02E+02	9.02E+02	1.81E+02	No
27	Chloroethane			0		0	-	-	-	-	0	0			0	-	-	-	-	7.41E+01	7.41E+00	1.48E+00	No
28	2-Chloro-Ethylvinyl Ether			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
29	Chloroform		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.02E+02	1.02E+02	2.04E+01	No
30	4,4' - DDD		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.61E-04	1.61E-04	3.83E-05	No
31	4,4' - DDE		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.75E-04	1.75E-04	2.96E-05	No
32	4,4' - DDT		YES	0		0	1.100	1.100	0.220	No	0	0			0	0.001	0.001	0.000	No	1.25E-04	1.25E-04	2.06E-05	No
33	Dichlorobromo-Methane		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.00E+01	1.00E+01	2.01E+00	No
34	1, 1-Dichloroethane			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
35	1, 2-Dichloroethane		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	2.34E+01	2.34E+01	4.67E+00	No
36	Trans-1, 2-Dichloro-Ethylene			0		0	-	-	-	-	0	0			0	-	-	-	-	5.91E+03	5.91E+03	1.18E+03	No
37	1, 1-Dichloroethylene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	4.17E+03	4.17E+03	8.33E+02	No
38	1, 2-Dichloropropane			0		0	-	-	-	-	0	0			0	-	-	-	-	8.43E+00	8.43E+00	1.70E+00	No
39	1, 3-Dichloro-Propylene			0		0	-	-	-	-	0	0			0	-	-	-	-	1.23E+01	1.23E+01	2.46E+00	No
40	Dieldrin		YES	0		0	0.240	0.240	0.048	No	0	0			0	0.056	0.056	0.011	No	3.12E-05	3.12E-05	8.25E-06	No
41	Ethylbenzene			0		0	-	-	-	-	0	0			0	-	-	-	-	1.24E+03	1.24E+03	2.49E+02	No
42	Methyl Bromide			0		0	-	-	-	-	0	0			0	-	-	-	-	8.71E+02	8.71E+02	1.74E+02	No
43	Methyl Chloride			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
44	Methylene Chloride		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	3.46E+02	3.46E+02	6.91E+01	No
45	1, 1, 2, 2-Tetrachloro-Ethane		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	2.33E+00	2.33E+00	4.67E-01	No
46	Tetrachloro-Ethylene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.92E+00	1.92E+00	3.83E-01	No
47	Toluene			0		0	-	-	-	-	0	0			0	-	-	-	-	8.72E+03	8.72E+03	1.74E+03	No
48	Toxaphene		YES	0		0	0.730	0.730	0.146	No	0	0			0	0.0002	0.000	0.000	No	1.62E-04	1.62E-04	3.24E-05	No
49	Tributyltin (TBT)		YES	0		0	0.460	0.460	0.092	No	0	0			0	0.072	0.072	0.014	No	-	-	-	-
50	1, 1, 1-Trichloroethane			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
51	1, 1, 2-Trichloroethane		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	9.91E+00	9.91E+00	1.82E+00	No
52	Trichloroethylene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.75E+01	1.75E+01	3.49E+00	No
53	Vinyl Chloride		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.42E+01	1.42E+00	2.85E-01	No
54	P-Chloro-M-Cresol			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
55	2-Chlorophenol			0		0	-	-	-	-	0	0			0	-	-	-	-	8.71E+01	8.71E+01	1.74E+01	No
56	2, 4-Dichlorophenol			0		0	-	-	-	-	0	0			0	-	-	-	-	1.72E+02	1.72E+02	3.44E+01	No
57	2, 4-Dimethylphenol			0		0	-	-	-	-	0	0			0	-	-	-	-	4.69E+02	4.69E+02	9.36E+01	No
58	4, 6-Dinitro-O-Cresol			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
59	2, 4-Dinitrophenol			0		0	-	-	-	-	0	0			0	-	-	-	-	3.11E+02	3.11E+02	6.22E+01	No
60	4,6-Dinitro-2-methylphenol		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.53E+02	1.53E+02	3.31E+01	No
61	Dioxin (2,3,7,8-TCDD)		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	2.07E-08	2.07E-08	5.53E-09	No
62	2-Nitrophenol			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
63	4-Nitrophenol			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
64	Pentachlorophenol		YES	0		0	8.773	8.773	1.743	No	0	0			0	8.693	8.693	1.338	No	1.77E+00	1.77E+00	3.54E-01	No
65	Phenol			0		0	-	-	-	-	0	0			0	-	-	-	-	5.83E+05	5.83E+05	1.03E+05	No
66	2, 4, 6-Trichlorophenol		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.41E+00	1.41E+00	2.83E-01	No
67	Acenaphthene			0		0	-	-	-	-	0	0			0	-	-	-	-	5.79E+02	5.79E+02	1.16E+02	No
68	Acenaphthylene			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
69	Anthracene			0		0	-	-	-	-	0	0			0	-	-	-	-	2.32E+04	2.32E+04	4.67E+03	No
70	Benzidine			0		0	-	-	-	-	0	0			0	-	-	-	-	1.16E-04	1.16E-04	2.32E-05	No
71	Benzo(A)Anthracene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.07E-02	1.07E-02	2.13E-03	No
72	Benzo(A)Pyrene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.07E-02	1.07E-02	2.13E-03	No
73	Benzo(B)fluoranthene			0		0	-	-	-	-	0	0			0	-	-	-	-	1.07E-02	1.07E-02	2.13E-03	No
74	Benzo(G,H,I)Perylene			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
75	Benzo(K)Fluoranthene			0		0	-	-	-	-	0	0			0	-	-	-	-	1.07E-02	1.07E-02	2.13E-03	No
76	Bis (2-Chloroethoxy) Methane			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
77	Bis (2-Chloroethyl)-Ether		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	3.07E-01	3.07E-01	6.15E-02	No
78	Bis (2-Chloroiso-Propyl) Ether			0		0	-	-	-	-	0	0			0	-	-	-	-	3.78E+04	3.78E+04	7.56E+03	No
79	Bis (2-Ethylhexyl) Phthalate	YES	YES	0		28	-	-	-	-	0	0			28	-	-	-	-	1.20E+00	1.20E+00	2.06E-01	Yes
80	4-Bromophenyl Phenyl Ether			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
81	Butyl Benzyl Phthalate			0		0	-	-	-	-	0	0			0	-	-	-	-	1.13E+03	1.13E+03	2.25E+02	No
82	2-Chloronaphthalene			0		0	-	-	-	-	0	0			0	-	-	-	-	9.24E+02	9.24E+02	1.85E+02	No
83	4-Chlorophenyl Phenyl Ether			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
84	Chrysene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.07E-02	1.07E-02	2.13E-03	No
85	Di-N-Butyl Phthalate			0		0	-	-	-	-	0	0			0	-	-	-	-	2.67E+03	2.67E+03	5.24E+02	No
86	Di-N-Octyl Phthalate			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
87	Dibenzo(A,H)Anthracene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.07E-02	1.07E-02	2.13E-03	No
88	1, 2-Dichlorobenzene			0		0	-	-	-	-	0	0			0	-	-	-	-	7.55E+02	7.55E+02	1.51E+02	No
89	1, 3-Dichlorobenzene			0		0	-	-	-	-	0	0			0	-	-	-	-	5.62E+02	5.62E+02	1.12E+02	No
90	1, 4-Dichlorobenzene			0		0	-	-	-	-	0	0			0	-	-	-	-	1.12E+03	1.12E+03	2.25E+01	No
91	3, 3-Dichlorobenzidine		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.66E-02	1.66E-02	3.32E-03	No
92	Diethyl Phthalate			0		0	-	-	-	-	0	0			0	-	-	-	-	2.56E+04	2.56E+04	5.11E+03	No
93	Dimethyl Phthalate			0		0	-	-	-	-	0	0			0	-	-	-	-	6.46E+05	6.46E+05	1.30E+05	No
94	2, 4-Dinitrotoluene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.09E+00	1.09E+00	3.86E-01	No
95	2, 6-Dinitrotoluene			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
96	1,2-Diphenylhydrazine			0		0	-	-	-	-	0	0			0	-	-	-	-	1.17E-01	1.17E-01	2.34E-02	No
97	Endosulfan (alpha)		YES	0		0	0.220	0.220	0.044	No	0	0			0	0.056	0.056	0.011	No	5.19E+01	5.19E+01	1.04E+01	No
98	Endosulfan (beta)		YES	0		0	0.220	0.220	0.044	No	0	0			0	0.056	0.056	0.011	No	5.19E+01	5.19E+01	1.04E+01	No
99	Endosulfan sulfate		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	5.19E+01	5.19E+01	1.04E+01	No
100	Endrin		YES	0		0	0.086	0.086	0.017	No	0	0			0	0.036	0.036	0.007	No	3.53E-02	3.53E-02	7.05E-03	No
101	Endrin Aldehyde		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.72E-01	1.72E-01	3.53E-02	No
102	Fluoranthene			0		0	-	-	-	-	0	0			0	-	-	-	-	8.12E+01	8.12E+01	1.62E+01	No
103	Fluorene			0		0	-	-	-	-	0	0			0	-	-	-	-	3.11E+03	3.11E+03	6.22E+02	No
104	Heptachlor		YES	0		0	0.52	0.520	0.104	No	0	0			0	0.0036	0.004	0.001	No	4.63E-05	4.63E-05	8.21E-06	No
105	Heptachlor Epoxide		YES	0		0	0.52	0.520	0.104	No	0	0			0	0.0036	0.004	0.001	No	2.23E-05	2.23E-05	4.50E-06	No
106	Hexachlorobenzene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.65E-04	1.62E-04	3.36E-05	No
107	Hexachlorobutadiene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.06E+01	1.06E+01	2.15E+00	No
108	Hexachlorocyclohexan (alpha)		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	2.85E-03	2.85E-03	5.70E-04	No
109	Hexachlorocyclohexan (beta)		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	9.87E-03	9.87E-03	1.66E-03	No
110	Hexachlorocyclohexan (gamma)		YES	0		0	0.950	0.950	0.190	No	0	0			0	-	-	-	-	1.08E+00	1.08E+00	2.15E-01	No
111	Hexachlorocyclopentadiene			0		0	-	-	-	-	0	0			0	-	-	-	-	8.45E+02	8.45E+02	1.23E+02	No
112	Hexachloroethane			0		0	-	-	-	-	0	0			0	-	-	-	-	1.92E+00	1.92E+00	3.84E-01	No
113	Indeno(1, 2, 3-CD)Pyrene		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.07E-02	1.07E-02	2.13E-03	No
114	Isophorone			0		0	-	-	-	-	0	0			0	-	-	-	-	5.61E+02	5.61E+02	1.12E+02	No
115	Naphthalene			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
116	Nitrobenzene			0		0	-	-	-	-	0	0			0	-	-	-	-	4.04E+02	4.04E+02	8.07E+01	No
117	N-Nitroso-N-Propylamine		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	2.95E-01	2.95E-01	5.90E-02	No
118	N-Nitrosodimethylamine		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	1.76E+00	1.76E+00	3.52E-01	No
119	N-Nitrosodiphenylamine		YES	0		0	-	-	-	-	0	0			0	-	-	-	-	3.50E+00	3.50E+00	7.00E-01	No
120	PCB-1016		YES	0		0	-	-	-	-	0	0			0	0.014	0.014	0.003	No	3.74E-05	3.74E-05	7.48E-06	No
121	PCB-1221		YES	0		0	-	-	-	-	0	0			0	0.014	0.014	0.003	No	3.74E-05	3.74E-05	7.48E-06	No
122	PCB-1232		YES	0		0	-	-	-	-	0	0			0	0.014	0.014	0.003	No	3.74E-05	3.74E-05	7.48E-06	No
123	PCB-1242		YES	0		0	-	-	-	-	0	0			0	0.014	0.014	0.003	No	3.74E-05	3.74E-05	7.48E-06	No
124	PCB-1248		YES	0		0	-	-	-	-	0	0			0	0.014	0.014	0.003	No	3.74E-05	3.74E-05	7.48E-06	No
125	PCB-1254		YES	0		0	-	-	-	-	0	0			0	0.014	0.014	0.003	No	3.74E-05	3.74E-05	7.48E-06	No
126	PCB-1260		YES	0		0	-	-	-	-	0	0			0	0.014	0.014	0.003	No	3.74E-05	3.74E-05	7.48E-06	No
127	Phenanthrene			0		0	-	-	-	-	0	0			0	-	-	-	-	-	-	-	-
128	Pyrene			0		0	-	-	-	-	0	0			0	-	-	-	-	2.33E+03	2.33E+03	4.67E+02	No
129	1, 2, 4-Trichlorobenzene			0		0	-	-	-	-	0	0			0	-	-	-	-	4.05E+01	4.05E+01	8.19E+00	No

Facility Name: DC Alabama, Inc. (Tallapoosa River)

NPDES No.: AL0083763

$$Q_r * C_d + Q_{d2} * C_{d2} + Q_s * C_s = Q_r * C_r$$

ID	Pollutant	Carcinogen "yes"	Type	Background from upstream source (C_{d2}) Daily Max µg/l	Background from upstream source (C_{d2}) Monthly Ave µg/l	Background Instream (C_s) Daily Max µg/l	Background Instream (C_s) Monthly Ave µg/l	Enter Max Daily Discharge as reported by Applicant (C_d) Max µg/l	Enter Avg Daily Discharge as reported by Applicant (C_d) Ave µg/l	Partition Coefficient (Stream / Lake)*
1	Antimony		Metals	0	0	0	0	0	0	-
2	Arsenic*,**	YES	Metals	0	0	0	0	0	0	0.574
3	Beryllium		Metals	0	0	0	0	0	0	-
4	Cadmium**		Metals	0	0	0	0	0	0	0.226
5	Chromium / Chromium III**		Metals	0	0	0	0	0	0	0.210
6	Chromium / Chromium VI**		Metals	0	0	0	0	0	0	-
7	Copper**		Metals	0	0	0	0	0	0	0.388
8	Lead**		Metals	0	0	0	0	0	0	0.205
9	Mercury**		Metals	0	0	0	0	0	0	0.302
10	Nickel**		Metals	0	0	0	0	0	4	0.505
11	Selenium		Metals	0	0	0	0	0	0	-
12	Silver		Metals	0	0	0	0	0	0	-
13	Thallium		Metals	0	0	0	0	0	0	-
14	Zinc**		Metals	0	0	0	0	0	0	0.330
15	Cyanide		Metals	0	0	0	0	0	0	-
16	Total Phenolic Compounds		Metals	0	0	0	0	0	0	-
17	Hardness (As CaCO3)		Metals	0	0	0	0	0	0	-
18	Acrolein		VOC	0	0	0	0	0	0	-
19	Acrylonitrile*	YES	VOC	0	0	0	0	0	0	-
20	Aldrin	YES	VOC	0	0	0	0	0	0	-
21	Benzene*	YES	VOC	0	0	0	0	0	0	-
22	Bromoform*	YES	VOC	0	0	0	0	0	0	-
23	Carbon Tetrachloride*	YES	VOC	0	0	0	0	0	0	-
24	Chlordane	YES	VOC	0	0	0	0	0	0	-
25	Chlorobenzene		VOC	0	0	0	0	0	0	-
26	Chlorodibromo-Methane*	YES	VOC	0	0	0	0	0	0	-
27	Chloroethane		VOC	0	0	0	0	0	0	-
28	2-Chloro-Ethylvinyl Ether		VOC	0	0	0	0	0	0	-
29	Chloroform*	YES	VOC	0	0	0	0	0	0	-
30	4,4'-DDD	YES	VOC	0	0	0	0	0	0	-
31	4,4'-DDE	YES	VOC	0	0	0	0	0	0	-
32	4,4'-DDT	YES	VOC	0	0	0	0	0	0	-
33	Dichlorobromo-Methane*	YES	VOC	0	0	0	0	0	0	-
34	1, 1-Dichloroethane		VOC	0	0	0	0	0	0	-
35	1, 2-Dichloroethane*	YES	VOC	0	0	0	0	0	0	-
36	Trans-1, 2-Dichloro-Ethylene		VOC	0	0	0	0	0	0	-
37	1, 1-DichloroEthylene*	YES	VOC	0	0	0	0	0	0	-
38	1, 2-Dichloropropane		VOC	0	0	0	0	0	0	-
39	1, 3-Dichloro-Propylene		VOC	0	0	0	0	0	0	-
40	Dieldrin	YES	VOC	0	0	0	0	0	0	-
41	Ethylbenzene		VOC	0	0	0	0	0	0	-
42	Methyl Bromide		VOC	0	0	0	0	0	0	-
43	Methyl Chloride		VOC	0	0	0	0	0	0	-
44	Methylene Chloride*	YES	VOC	0	0	0	0	0	0	-
45	1, 1, 2, 2-Tetrachloro-Ethane*	YES	VOC	0	0	0	0	0	0	-
46	Tetrachloro-Ethylene*	YES	VOC	0	0	0	0	0	0	-
47	Toluene		VOC	0	0	0	0	0	0	-
48	Toxaphene	YES	VOC	0	0	0	0	0	0	-
49	Tributyltin (TBT)	YES	VOC	0	0	0	0	0	0	-
50	1, 1, 1-TrichloroEthane		VOC	0	0	0	0	0	0	-
51	1, 1, 2-TrichloroEthane*	YES	VOC	0	0	0	0	0	0	-
52	TrichloroEthylene*	YES	VOC	0	0	0	0	0	0	-
53	Vinyl Chloride*	YES	VOC	0	0	0	0	0	0	-
54	P-Chloro-M-Cresol		Acids	0	0	0	0	0	0	-
55	2-Chlorophenol		Acids	0	0	0	0	0	0	-
56	2, 4-Dichlorophenol		Acids	0	0	0	0	0	0	-
57	2, 4-Dimethylphenol		Acids	0	0	0	0	0	0	-
58	4, 6-Dinitro-O-Cresol		Acids	0	0	0	0	0	0	-
59	2, 4-Dinitrophenol		Acids	0	0	0	0	0	0	-
60	4,6-Dinitro-2-methylphenol	YES	Acids	0	0	0	0	0	0	-
61	Dioxin (2,3,7,8-TCDD)	YES	Acids	0	0	0	0	0	0	-
62	2-Nitrophenol		Acids	0	0	0	0	0	0	-
63	4-Nitrophenol		Acids	0	0	0	0	0	0	-
64	Pentachlorophenol*	YES	Acids	0	0	0	0	0	0	-
65	Phenol		Acids	0	0	0	0	0	0	-
66	2, 4, 6-Trichlorophenol*	YES	Acids	0	0	0	0	0	0	-
67	Acenaphthene		Bases	0	0	0	0	0	0	-
68	Acenaphthylene		Bases	0	0	0	0	0	0	-
69	Anthracene		Bases	0	0	0	0	0	0	-
70	Benzidine		Bases	0	0	0	0	0	0	-
71	Benzo(A)Anthracene*	YES	Bases	0	0	0	0	0	0	-
72	Benzo(A)Pyrene*	YES	Bases	0	0	0	0	0	0	-
73	3, 4 Benzo-Fluoranthene		Bases	0	0	0	0	0	0	-
74	Benzo(GHI)Perylene		Bases	0	0	0	0	0	0	-
75	Benzo(K)Fluoranthene		Bases	0	0	0	0	0	0	-
76	Bis (2-Chloroethoxy) Methane		Bases	0	0	0	0	0	0	-
77	Bis (2-Chloroethyl)-Ether*	YES	Bases	0	0	0	0	0	0	-
78	Bis (2-Chloro-Propyl) Ether		Bases	0	0	0	0	0	0	-
79	Bis (2-Ethylhexyl) Phthalate*	YES	Bases	0	0	0	0	28	28	-
80	4-Bromophenyl Phenyl Ether		Bases	0	0	0	0	0	0	-
81	Butyl Benzyl Phthalate		Bases	0	0	0	0	0	0	-
82	2-Chloronaphthalene		Bases	0	0	0	0	0	0	-
83	4-Chlorophenyl Phenyl Ether		Bases	0	0	0	0	0	0	-
84	Chrysene*	YES	Bases	0	0	0	0	0	0	-
85	Di-N-Butyl Phthalate		Bases	0	0	0	0	0	0	-
86	Di-N-Octyl Phthalate		Bases	0	0	0	0	0	0	-
87	Dibenzo(A,H)Anthracene*	YES	Bases	0	0	0	0	0	0	-
88	1, 2-Dichlorobenzene		Bases	0	0	0	0	0	0	-
89	1, 3-Dichlorobenzene		Bases	0	0	0	0	0	0	-
90	1, 4-Dichlorobenzene		Bases	0	0	0	0	0	0	-
91	3, 3-Dichlorobenzidine*	YES	Bases	0	0	0	0	0	0	-
92	Diethyl Phthalate		Bases	0	0	0	0	0	0	-
93	Dimethyl Phthalate		Bases	0	0	0	0	0	0	-
94	2, 4-Dinitrotoluene*	YES	Bases	0	0	0	0	0	0	-
95	2, 6-Dinitrotoluene		Bases	0	0	0	0	0	0	-
96	1,2-Diphenylhydrazine		Bases	0	0	0	0	0	0	-
97	Endosulfan (alpha)	YES	Bases	0	0	0	0	0	0	-
98	Endosulfan (beta)	YES	Bases	0	0	0	0	0	0	-
99	Endosulfan sulfate	YES	Bases	0	0	0	0	0	0	-
100	Endrin	YES	Bases	0	0	0	0	0	0	-
101	Endrin Aldehyde	YES	Bases	0	0	0	0	0	0	-
102	Fluoranthene		Bases	0	0	0	0	0	0	-
103	Fluorene		Bases	0	0	0	0	0	0	-
104	Heptachlor	YES	Bases	0	0	0	0	0	0	-
105	Heptachlor Epoxide	YES	Bases	0	0	0	0	0	0	-
106	Hexachlorobenzene*	YES	Bases	0	0	0	0	0	0	-
107	Hexachlorobutadiene*	YES	Bases	0	0	0	0	0	0	-
108	Hexachlorocyclohexane (alpha)	YES	Bases	0	0	0	0	0	0	-
109	Hexachlorocyclohexane (beta)	YES	Bases	0	0	0	0	0	0	-
110	Hexachlorocyclohexane (gamma)	YES	Bases	0	0	0	0	0	0	-
111	Hexachlorocyclopentadiene		Bases	0	0	0	0	0	0	-
112	Hexachloroethane		Bases	0	0	0	0	0	0	-
113	Endosulfan (1, 2, 3-CH)Pyrene*	YES	Bases	0	0	0	0	0	0	-
114	Isophorone		Bases	0	0	0	0	0	0	-
115	Naphthalene		Bases	0	0	0	0	0	0	-
116	Nitrobenzene		Bases	0	0	0	0	0	0	-
117	N-Nitroso-N-Propylamine*	YES	Bases	0	0	0	0	0	0	-
118	N-Nitroso-N-Methylamine*	YES	Bases	0	0	0	0	0	0	-
119	N-Nitroso-B-N-Phenylamine*	YES	Bases	0	0	0	0	0	0	-
120	PCB-1016	YES	Bases	0	0	0	0	0	0	-
121	PCB-1221	YES	Bases	0	0	0	0	0	0	-
122	PCB-1232	YES	Bases	0	0	0	0	0	0	-
123	PCB-1242	YES	Bases	0	0	0	0	0	0	-
124	PCB-1248	YES	Bases	0	0	0	0	0	0	-
125	PCB-1254	YES	Bases	0	0	0	0	0	0	-
126	PCB-1260	YES	Bases	0	0	0	0	0	0	-
127	Phenanthrene		Bases	0	0	0	0	0	0	-
128	Pyrene		Bases	0	0	0	0	0	0	-
129	1, 2, 4-Trichlorobenzene		Bases	0	0	0	0	0	0	-

0.2	Enter Q_d = wastewater discharge flow from facility (MGD)
0.309458	Q_r = wastewater discharge flow (cfs) (this value is calculated from the MGD)
0	Enter flow from upstream discharge (MGD) = background stream flow in MGD above point of discharge
0	Q_{d2} = background stream flow from upstream source (cfs)
827.97	Enter 7Q10, Q_s = background stream flow in cfs above point of discharge
470.96	Enter or estimated, 1Q10, Q_s = background stream flow in cfs above point of discharge (1Q10 estimated at 71% of 7Q10)
588.82	Enter Mean Annual Flow, Q_s = background stream flow in cfs above point of discharge
997.24	Enter 7Q2, Q_s = background stream flow in cfs above point of discharge (For LWF class streams)
Enter to / Left	Enter C_s = background in-stream pollutant concentrations in µg/l (assuming this is zero "0" unless there is data)
$Q_r = Qd*Cd + Q_s$	Q_r = resultant in-stream flow, after discharge
Calculated on other	C_r = resultant in-stream pollutant concentration in µg/l in the stream (after complete mixing occurs)
50	Enter, Background Hardness above point of discharge (assumed 50 South of Birmingham and 100 North of Birmingham)
7.00 s.u.	Enter, Background pH above point of discharge
YES	Enter, is discharge to a stream? "YES" Other option would be to a Lake. (This changes the partition coefficients for the metals)

** Using Partition Coefficients

December 3, 2018

Facility Name: [illegible]

NPDES No. [illegible]

#	Pollutant	RPP	Carcinogen "yes"	Background from upstream source (Cd) Daily Max	Max Daily Discharge as reported by Applicant (Cp)	Freshwater Acute: Water Quality Criteria (Cs)	Freshwater Acute: Draft Permit Limit (Cd)	Freshwater Acute: 20% of Draft Permit Limit	Freshwater Acute: RP?	Background from upstream source (Cd) Monthly Ave	Avg Daily Discharge as reported by Applicant (Cp)	Freshwater Chronic: Water Quality Criteria (Cs)	Freshwater Chronic: Draft Permit Limit (Cd)	Freshwater Chronic: 20% of Draft Permit Limit	Freshwater Chronic: RP?	Human Health Consumption Fish & Water: Water Quality Criteria (Cs)	Human Health Consumption Fish & Water: Draft Permit Limit (Cd)	Human Health Consumption Fish & Water: 20% of Draft Permit Limit	Human Health Consumption Fish & Water: RP?	Human Health Consumption Fish only: Water Quality Criteria (Cs)	Human Health Consumption Fish only: Draft Permit Limit (Cd)	Human Health Consumption Fish only: 20% of Draft Permit Limit	Human Health Consumption Fish only: RP?
1	Antimony			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
2	Arsenic		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
3	Beryllium			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
4	Cadmium			0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	-	-	-	-	-	-	-	-
5	Chromium/ Chromium III			0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	-	-	-	-	-	-	-	-
6	Chromium/ Chromium VI			0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	-	-	-	-	-	-	-	-
7	Copper			0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	-	-	-	-
8	Lead			0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	-	-	-	-	-	-	-	-
9	Mercury			0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
10	Nickel			0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
11	Selenium			0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
12	Silver			0	0	[illegible]	[illegible]	[illegible]	No	0	0	-	-	-	-	-	-	-	-	-	-	-	-
13	Thallium			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
14	Zinc			0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
15	Cyanide			0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
16	Total Phenolic Compounds			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
17	Hardness (As CaCO3)			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
18	Acrolein			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
19	Acrylonitrile		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
20	Aldrin		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
21	Benzene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
22	Bromoform		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
23	Carbon Tetrachloride		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
24	Chlordane		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
25	Chlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
26	Chlorodibromo-methane		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
27	Chloroethane			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
28	2-Chloro-Ethylvinyl Ether			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
29	Chloroform		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
30	4, 4' - DDD		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
31	4, 4' - DDE		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
32	4, 4' - DDT		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
33	Dichlorobromo-Methane		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
34	1, 1-Dichloroethane			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
35	1, 2-Dichloroethane		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
36	Trans-1, 2-Dichloro-Ethylene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
37	1, 1-Dichloroethylene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
38	1, 2-Dichloropropane			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
39	1, 3-Dichloro-Propylene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
40	Dieldrin		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
41	Ethylbenzene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
42	Methyl Bromide			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
43	Methyl Chloride			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
44	Methylene Chloride		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
45	1, 1, 2, 2-Tetrachloro-Ethane		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
46	Tetrachloro-Ethylene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
47	Toluene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
48	Toxaphene		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
49	Tributyltin (TBT)		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	-	-	-	-	-	-	-	-
50	1, 1, 1-Trichloroethane			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
51	1, 1, 2-Trichloroethane		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
52	Trichloroethylene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
53	Vinyl Chloride		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
54	P-Chloro-M-Cresol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
55	2-Chlorophenol			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
56	2, 4-Dichlorophenol			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
57	2, 4-Dimethylphenol			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
58	4, 6-Dinitro-O-Cresol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
59	2, 4-Dinitrophenol			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
60	4, 6-Dinitro-2-methylphenol		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
61	Dioxin (2,3,7,8-TCDD)		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
62	2-Nitrophenol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
63	4-Nitrophenol			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
64	Pentachlorophenol		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
65	Phenol			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
66	2, 4, 6-Trichlorophenol		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
67	Acenaphthene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
68	Acenaphthylene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
69	Anthracene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
70	Benzidine			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
71	Benzo(a)Anthracene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
72	Benzo(a)Pyrene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
73	Benzo(b)Fluoranthene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
74	Benzo(GHI)Perylene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
75	Benzo(K)Fluoranthene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
76	Bis (2-Chloroethoxy) Methane			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
77	Bis (2-Chloroethyl)-Ether		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
78	Bis (2-Chloroiso-Propyl) Ether			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
79	Bis (2-Ethylhexyl) Phthalate		YES	[illegible]	0	-	-	-	-	0	[illegible]	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
80	4-Bromophenyl Phenyl Ether			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
81	Butyl Benzyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
82	2-Chloronaphthalene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
83	4-Chlorophenyl Phenyl Ether			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
84	Chrysene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
85	Di-N-Butyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
86	Di-N-Octyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
87	Dibenzo(A,H)Anthracene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
88	1, 2-Dichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
89	1, 3-Dichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
90	1, 4 Dichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
91	3, 3-Dichlorobenzidine		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
92	Diethyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
93	Dimethyl Phthalate			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
94	2, 4-Dinitrotoluene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
95	2, 6-Dinitrotoluene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
96	1,2-Diphenylhydrazine			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
97	Endosulfan (alpha)		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
98	Endosulfan (beta)		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
99	Endosulfan sulfate		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
100	Endrin		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
101	Endrin Aldehyde		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
102	Fluoranthene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
103	Fluorene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
104	Heptachlor		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
105	Heptachlor Epoxide		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
106	Hexachlorobenzene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
107	Hexachlorobutadiene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
108	Hexachlorocyclohexane (alpha)		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
109	Hexachlorocyclohexane (beta)		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
110	Hexachlorocyclohexane (gamma)		YES	0	0	[illegible]	[illegible]	[illegible]	No	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
111	Hexachlorocyclopentadiene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
112	Hexachloroethane			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
113	Indeno(1, 2, 3-CK)Pyrene		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
114	Isophorone			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
115	Naphthalene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
116	Nitrobenzene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
117	N-Nitrosodi-N-Propylamine		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
118	N-Nitrosodimethylamine		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
119	N-Nitrosodiphenylamine		YES	0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
120	PCB-1016		YES	0	0	-	-	-	-	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
121	PCB-1221		YES	0	0	-	-	-	-	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
122	PCB-1232		YES	0	0	-	-	-	-	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
123	PCB-1242		YES	0	0	-	-	-	-	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
124	PCB-1248		YES	0	0	-	-	-	-	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
125	PCB-1254		YES	0	0	-	-	-	-	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
126	PCB-1260		YES	0	0	-	-	-	-	0	0	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
127	Phenanthrene			0	0	-	-	-	-	0	0	-	-	-	-	-	-	-	-	-	-	-	-
128	Pyrene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No
129	1, 2, 4-Trichlorobenzene			0	0	-	-	-	-	0	0	-	-	-	-	[illegible]	[illegible]	[illegible]	No	[illegible]	[illegible]	[illegible]	No

ANTIDEGRADATION RATIONALE

Permit Number: AL0083763
Facility Name: DC Alabama, Inc.
Receiving Water: Tallapoosa River
Stream Category: Tier 2 as defined by ADEM Admin. Code 335-6-10-.12
Discharge Description: Process Water and Stormwater

The following preliminary determination was prepared in accordance with ADEM Admin. Code 335-6-10-.12 (7) (c):

The Department has reviewed the information submitted by applicant in accordance with ADEM Admin. Code 335-6-10-.12 (9). The applicant has demonstrated that there are no alternative options which are economically feasible or technically viable. In the case of technically viable options, the applicant has shown them to be cost prohibitive through the alternatives analysis required by the permit application.

The permit applicant has indicated that the following economic and/or social benefits will result from the issuance of this permit:

- The new stormwater discharge to the Tallapoosa River will prevent inadvertent overflow of water outside the process water containment and reduce the amount of stormwater from the industrial areas to the Unnamed Tributary to Miller Creek.
- There will be approximately 25 contractors employed during the length of the project.
- The facility currently employs 200 DC Alabama, Inc. and contract employees. There is no anticipated reduction in employment as a result of the new discharge.
- The new treatment process and discharge will create an estimated $30,000 in local and state taxes.
- Land application is not viable for the discharge due to insufficient land area owned by the facility, shallow soil surrounding the facility which has limited water absorption qualities, and metals concentrations present in the water.

The Department has determined that the discharge as proposed by the permit applicant is necessary for important economic and social development in the area in which the receiving water is located.

Prepared By: Scott Ramsey
Date: July 8, 2019

November 16, 2020

The Dow Chemical Company
1940 Ohio Ferro Road
Mt. Meigs, AL 36057

Scott Jackson
Alabama Department of Environmental Management
Water Division – Industrial/Municipal Branch
Industrial Section
P.O. 301463
Montgomery, Alabama 36130-1463

Re: Comments on the Revised Draft NPDES Permit Modification
NPDES Permit Number AL0083763

Dear Mr. Jackson:

DC Alabama, Inc. (DCA) appreciates the opportunity to provide comments on the draft modified NPDES permit dated October 20, 2020. Our review of the draft permit reveals that DCA's requested changes have been incorporated. However, additional requirements, including permit limitations and monitoring requirements for bis (2-ethylhexyl) phthalate (DEHP or BEHP) have also been added to the draft modified permit. This letter provides comments on those additional requirements.

We understand that ADEM has included DEHP (or BEHP) based on the inclusion of low levels of these constituents in analytical sample results submitted with our NPDES permit applications. DCA requests that limitations and monitoring requirements for these compounds be removed from the facility's modified NPDES permit based on the following data and information, as listed below.

- DCA manufactures silica metal using quartz river rock (silica), charcoal, and wood chips as basic ingredients in the manufacturing process. DEHP is a semi-volatile organic compound broadly classified as a phthalic acid ester (PAE) and is widely used as a plasticizer in the manufacture of plastics, especially polyvinyl chloride (PVC). It is ubiquitous in the environment and can be found around the world wherever plastic products are made, used, or disposed of. DCA does not believe that DEHP is present in any of the materials used in its manufacturing process or in any of the facility's stormwater source areas, thus, there is no reason to expect that it is present in the facility's stormwater outfalls
- A number of peer-reviewed technical papers have been published which indicate the difficulty in accurately analyzing for the presence of DEHP in laboratories. A sampling of these documents is provided for your reference in Attachment A and includes the following:

- The Wisconsin Department of Natural Resources special guidance to address the issue of false detections of DEHP in groundwater monitoring wells (Publication Number PUB-WA-1011 Rev. 2002).
- A 2013 paper Net, et al discussing the difficulty of accurately quantifying low concentrations of phthalic acid esters (including DEHP). The authors stated that this was because "they are ubiquitous and could be present in water, organic solvents, air, glassware and the plastic material used for the analysis." The paper presented the authors' findings regarding specific laboratory quality control procedures intended to minimize sample contamination during analyses to measure phthalates. .
- Similar permittees have evaluated reports of the presence of DEHP in manufacturing processes that would not made use of the material. Specifically, a study conducted at the U. S. Steel Fairfield, AL facility in 2017 was conducted as DEHP was intermittently reported to be present in some of the stormwater samples collected at the facility. The results of a split sample study concluded that "no consistent detections of BEHP (DEHP)" were observed at the facility's process wastewater outfall or at internal source waters.
- DCA reached a similar conclusion to U.S. Steel regarding DEHP detections in samples collected during preparation of DCA's initial NPDES permit application in 2018. Of the 42 samples analyzed for DEHP between February 2018 and April 2018 by the TestAmerica laboratory in Pensacola, Florida, 20 samples contained detectable amounts of DEHP. However, 18 of the 20 samples also had detectable amounts of DEHP in the laboratory method blank, indicating laboratory contamination.
- In October 2019, Jacobs Engineering Group, Inc. (Jacobs) completed a study to determine the cause of unexpected and inconsistent DEHP concentrations in groundwater samples collected from monitoring wells at the DCA facility. Groundwater samples were collected from five monitoring wells and split samples were sent to the TestAmerica laboratory in Pensacola, Florida, the lab used for previous sample analyses, and the TestAmerica Laboratory in Houston, Texas. The TestAmerica laboratory in Pensacola, Florida detected DEHP in three of the five samples at concentrations greater than the maximum contaminant level (MCL) for groundwater. DEHP was not detected in any of the samples sent to the TestAmerica laboratory in Houston, Texas. This information is summarized in the Semi-Annual Groundwater Monitoring Report for the first half of 2020 that will be submitted to ADEM. These results, in combination with the stormwater results referenced from 2018, indicated that DEHP may have been a laboratory contaminant from the TestAmerica Pensacola, Florida location.

Based on the information presented above, DCA requests that limitations and monitoring requirements for DEHP be removed from DCA's draft modified NPDES permit. DCA appreciates this opportunity to provide comments and is available to answer questions or discuss this issue further.

Sincerely,

Meredith Bruick
Site Leader
DC Alabama, Inc.

Attachments

Problems Associated with bis(2-ethylhexyl)phthalate Detections in Groundwater Monitoring Wells

PUB-WA-1011 Rev. 2002

WISCONSIN DEPT. OF NATURAL RESOURCES

Waste & Materials Management
P.O. Box 7921
Madison, WI 53707-7921

Description: This document provides guidance for investigating whether phthalate detections in monitoring wells are false exceedances or real groundwater contaminants, and the application of ss. NR 50716, NR 507.17, NR 507.28(3), NR 508.05 and NR 140.16, Wis. Adm. Code, in these situations.

Applicability: This guidance primarily is intended for evaluating the need for assessment monitoring when di-(2-ethylhexyl)phthalate is detected in monitoring wells at landfills regulated under ch. NR 507, Wis. Adm. Code. In addition, it may be applicable to landfills for which corrective action is necessary or cases where NR 507 and NR 716 may both be applicable. The recommendations contained in this guidance may have general applicability to site investigations, brownfields, or remediation sites; however, it is not intended to supersede Superfund guidance or existing guidance in the Department of Natural Resources Remediation and Redevelopment Program related to acceptable levels of contamination.

Problem Statement:
Consultants, facilities, and staff have had questions about the validity of bis(2-ethylhexyl)phthalate in landfill monitoring wells, particularly when it is the only contaminant detected.

Bis(2-ethylhexyl)phthalate is a semi-volatile organic compound (SVOC) that is also known as di-(2-ethylhexyl)phthalate, and **D**EHP. Some DNR programs refer to this compound as BEHP; however, this is not a recognized synonym in many chemical databases. Using this acronym can cause confusion because in scientific literature, **B**EHP usually refers to butyl(2-ethylhexyl)phthalate (cas number 85-69-8). Although DEHP has been identified as a common laboratory contaminant, phthalates are prevalent in the environment because of their use in plastics like PVC. Groundwater monitoring plans may include SVOCs when facilities investigate elevated indicator parameter concentrations, leachate results indicate possible problems, special circumstances at a landfill raise concerns or a general site investigation is being performed by the Department or others. Data in GEMS indicates that most detection limits reported are at or above the NR 140 Groundwater Quality Preventive Action Limit (PAL) of 0.6 ug/L, so almost every quantifiable result is a PAL exceedance. This guidance attempts to lay out the problems and appropriate approaches to assessing whether with phthalates are really present in the groundwater or an artifact of the sampling and analysis procedures (in other words, a false exceedance). We have reviewed a number of reports for Wisconsin sites and queried other states for their experience with this problem.

Recommendations
Whether DEHP is detected during assessment monitoring or in conjunction with other monitoring done at a site, staff should ask the facility to investigate whether the DEHP is a false exceedance attributable to sampling or laboratory procedures.

If sampling procedures or field conditions are identified as contamination sources, the facility should be instructed to change their sampling procedures to eliminate the contamination source. This may mean changing sampling equipment, materials or collection method. Although some have proposed filtering as a

means of excluding DEHP particulates from sampling, there is a general consensus that **filtering samples is not an appropriate option.**

If the source of DEHP is attributed to laboratory contamination, the facility should be directed to obtain additional analyses for which laboratory contamination is controlled. The facility may need to switch laboratories if their laboratory is unable to control contamination adequately.

If the facility is requesting the cessation of assessment monitoring and DEHP is the only substance detected above the NR 140 PAL and the facility has demonstrated that DEHP is a false exceedance as per 508.05(1), then staff may allow the facility to discontinue assessment monitoring. If the concentrations of DEHP cannot be fully attributed to a false exceedance, staff should consider whether it is more appropriate to discontinue assessment monitoring or to propose alternate assessment monitoring as provided in NR 508.05(2) and (3)(a).

If the facility has not begun assessment monitoring, DEHP is the only substance detected above the PAL and there are no other reasons for assessment monitoring, then it would not be necessary for the facility to initiate assessment monitoring.

Suggested Approach to Determine the Credibility of DEHP Detects
Given the prevalence of DEHP in the environment and the high potential for contaminating samples, the source of DEHP in groundwater cannot be dismissed automatically as sampling or laboratory error. It may be necessary to modify sampling plans to incorporate additional blanks and to change sampling protocols. Ultimately, any corrective action or requirements for assessment monitoring will need to be based on evaluation of all available information and the applicable rules.

Assess Blank Results
Method blanks are useful for determining whether laboratory procedures introduced any contamination into the analysis. Although facilities are supposed to flag data when a contaminant is detected in the method blank, you should not rely solely on the flag in assessing the source. Experience has taught us that data is not flagged reliably and even when flags are present, the concentration of the contaminant in the method blank may not be reported or available in GEMS. If method blank results are available and the concentration of the blank is less than 5% of the sample concentration, the DEHP concentrations in the sample may be biased high, but cannot be attributed entirely to laboratory contamination. If the concentration of the sample is in the same range as the method blank, sample results may be the result of laboratory contamination. If the concentration of the method blank is near the detection limit or less than the limit of quantitation and sample results are in the same range, we suggest that sample results could be attributed to contamination. If method blank results exceed the LOQ, the facility should take steps to obtain sample results under circumstances in which laboratory contamination is better controlled.

Field blanks may be quite useful in determining whether sampling is contributing contamination. You should be clear about how these blanks were collected and what they represent. To the extent possible, field blanks should be collected in the same manner as the samples, i.e. be exposed to the same equipment and materials as the samples. In evaluating these results, you may need to consider what water was used for a field blank. If the water in the blank is from the same container as was used to clean equipment and without additional information, it may not be possible to determine whether the water or the sampling equipment is the source of contamination.

Rinsate blanks may also be useful indicators that sampling is the source of DEHP. As with field blanks, investigators should be clear about what rinsate blanks represent. Typically, these blanks are collected after equipment is cleaned and represent potential carry-over between sampling stations. These blanks may also provide an indication of rinse water contamination if this blank is from the same source as the rinse water.

Trip blanks are not generally collected or used for semi-volatiles and may have limited use in evaluating the source of the contamination because DEHP does not volatilize at an appreciable rate. These blanks typically are supplied by the laboratory and accompany samples without direct exposure to field conditions.

Change Sampling Procedures
Although evaluating blanks is an important first step in investigating sources of contamination, not all procedural problems result in contaminated blanks. The History section below highlights possible sampling artifacts that are not easily proven or addressed. Obviously, any equipment or supplies that are plastic or are in contact with plastics should be carefully evaluated. It may be necessary to choose another sampling procedure and compare results. For instance, if investigators believe that bailing is causing abrasion to the well casing or that the well casing is flaking, it may be wise to sample using a pumping procedure. Because DEHP adheres strongly to any particulates, filtering the samples is not an acceptable modification to sampling procedures nor can it be used to "prove" that the source of DEHP is the well casing.

Other Considerations
In addition to evaluating blank results, facility or staff investigations of DEHP detections should include the following considerations:

- What about well construction materials?
- Is the piping or casing PVC or other plastic?
- Is the piping or casing steel?

- Is there other evidence that the landfill is leaking?
  - Are indicator parameters elevated or do they show a trend?
  - Are VOCs present? (VOCs may increase DEHP solubility)
  - Are petroleum contaminants present? (As with VOCs, gasoline and other petroleum products can act as a solvent for DEHP)

- Is there a pattern to the detected values?
  - Is it detected in the leachate?
  - Was it detected in background or up-gradient wells in the "same" concentration range?
  - Has it been detected historically in the affected wells?
  - Are detected concentrations consistent over time? Are they erratic?
  - Were affected wells constructed in the same time period?

Evaluating whether the detected concentrations in the down-gradient wells are the "same" as background wells can be somewhat subjective. Usually there is only one result per sample, so investigators may not be able to determine the variability associated with sampling and laboratory analysis adequately. Absent other information and as a rule of thumb, down-gradient results two to five times the concentration in the background well may be considered to be in the same concentration range. This evaluation can easily be complicated if blanks also show contamination. Frequently, there are insufficient data to apply statistical techniques to determine whether differences are significant. For instance, to understand and assess the variability in various data points, multiple analyses of the same samples may be necessary. Before using a statistical approach, it is important to consider the underlying principles and assumptions of the statistical tool proposed to assure that it can be applied appropriately to the data set.

History – Sites Where DEHP is Attributed to Sampling
After detecting DEHP in groundwater monitoring wells at concentrations in excess of the NR 140 PAL, a number of consultants and laboratories performed investigations to determine whether the source was sample contamination. The investigations generally ruled out laboratory contamination as the source because method blanks were either free of contamination or the concentrations of DEHP in the method blanks were much lower than concentrations in the samples. The investigators have attributed detects in the wells to degradation (aging) of the well casing, microbial action (iron bacteria) on sample tubing and abrasion on well casing, bailer and rope associated with bailing procedures.

At this point, contamination from sampling cannot be attributed to any single sampling technique. At one facility using bailers, the field collection personnel reported that visually turbid samples seemed to be a predictor of phthalate concentrations. Subsequent analyses of scrapings from the bailer and ropes indicated the presence of DEHP. They proposed filtering samples as a means to more accurately assess the true DEHP concentrations in the wells. At another facility where sample crews used low-flow pumping and collected field blanks, investigators visually examined tubing that had been dedicated to sampling an affected monitoring well and noted the presence of black mucilaginous material on the walls. Field blanks collected through new tubing did not contain detectable DEHP concentrations; however, blanks prepared using the tubing dedicated to the well contained significant concentrations of DEHP.

During Superfund Site Inspections in Northeast Region, DNR staff found phthalates both in groundwater and rinsate samples, regardless of the site under investigation. The investigators traced the phthalates to contaminated rinse water. They tested water directly from the still and found that it, too, contained high phthalates so contamination could not be attributed solely to storing the rinse water in plastic carboys. There are sites, however, for which phthalate concentrations cannot be attributed to sampling or laboratory analysis.

Additional Chemical Information and Environmental Fate of Bis(2-ethylhexyl)phthalate
Bis(2-ethylhexyl)phthalate (CAS Number 117-81-7) is one of several common names for 1,2-Benzenedicarboxylic acid, bis(2-ethylhexyl) ester. DEHP is common in the environment because of its use in plastics. Sampling and laboratory equipment, monitoring wells, and waste disposed in landfills may contain or be constructed of plastics. In addition to its use in plastics, DEHP is also used in inks, adhesives, coatings, pesticides, cosmetics, vacuum pump oil and as a dielectric fluid in ballast capacitors and other electrical equipment (e.g., transformers).

DEHP has low solubility in water (300 - 400 µg/L), is soluble in most organic solvents, and evaporates slowly into the air. In the environment, DEHP will attach strongly to soil particles or humic material. Although DEHP may biodegrade under aerobic conditions (e.g. in lakes or rivers), DEHP has not been shown to degrade in anaerobic conditions, such as landfill leachate. Additional information on DEHP, its environmental fate and toxicity can be obtained through EPA's Substance Registry System (SRS) by searching for the compound and following the Related Links at the end of the compound listing (http://ofmpub.epa.gov/sor_internet/registry/substreg/home/overview/home.do). The TOXNET website accesses several chemical databases and is also good source of information. http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?TOXLINE

Contact DNRWasteMaterials@Wisconsin.gov for further information.

Disclaimer: This document is intended solely as guidance and does not contain any mandatory requirements except where requirements found in statute or administrative rule are referenced. Any regulatory decisions made by the Department of Natural Resources in any matter addressed by this guidance will be made by applying the governing statutes and administrative rules to the relevant facts.

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WISCONSIN DEPARTMENT OF NATURAL RESOURCES
NOTICE OF FINAL GUIDANCE & CERTIFICATION

Pursuant to ch. 227, Wis. Stats., the Wisconsin Department of Natural Resources has finalized and hereby certifies the following guidance document.

DOCUMENT ID

WA-19-1011-C

DOCUMENT TITLE

Problems Associated With bis(2-ethylhexyl)phthalate Detections in Groundwater Monitoring Wells

PROGRAM/BUREAU

Waste and Materials Management

STATUTORY AUTHORITY OR LEGAL CITATION

Ch. 289, Wis. Stats.; chs. NR 507, 508, 140, Wis. Adm. Code

DATE SENT TO LEGISLATIVE REFERENCE BUREAU (FOR PUBLIC COMMENTS)

11/25/2019

DATE FINALIZED

December 18, 2019

DNR CERTIFICATION

I have reviewed this guidance document or proposed guidance document and I certify that it complies with sections 227.10 and 227.11 of the Wisconsin Statutes. I further certify that the guidance document or proposed guidance document contains no standard, requirement, or threshold that is not explicitly required or explicitly permitted by a statute or a rule that has been lawfully promulgated. I further certify that the guidance document or proposed guidance document contains no standard, requirement, or threshold that is more restrictive than a standard, requirement, or threshold contained in the Wisconsin Statutes.

Joseph P Van Rossum

December 18, 2019

Signature

Date

Reliable quantification of phthalates in environmental matrices (air, water, sludge, sediment and soil): A review

Sopheak Net, Anne Delmont, Richard Sempere, Andrea Paluselli, Baghdad Ouddane

Reliable quantification of phthalates in environmental matrices (air, water, sediment and soil): A review

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Abstract

Because of their widespread application, phthalates are ubiquitous in the environment. Their presence in the environment has attracted considerable attention due to their potential impacts on ecosystem functioning and on public health, and their quantification has become a necessity. However, PAEs are ubiquitous in the laboratory environment/products; analysis of real samples with a low PAE background can be difficult. Therefore, accurate analysis of PAEs in environmental matrices is a challenging task. This paper is a synthesis of the extensive literature data on the most performance methods for extraction/pretreatment and quantification recently developed for quantifying PAEs in different environmental matrices (air, water, sediment and soil). The procedures of quality control and quality assurance are also presented to overcome the problem of sample contamination and the problems encountered due to matrix effects. This paper also provides useful information about the material preparation, sample pretreatment and the quantification to avoid overestimating PAE concentrations in environmental matrices.

Keywords: phthalates, DEHP, environmental matrices, quantification, derivatization, GC/MS, LC/MS.

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Introduction

Phthalates or phthalic acid esters (PAEs) are widely used since 1920s in the manufacture and processing of plastic products as plasticizers. To date, PAEs are used in a very broad range of industrial applications (Serôdio et al., 2006; Simoneit et al., 2005). Not chemically but only physically bound to the polymeric matrix, PAEs can easily be released into the environment directly and/or indirectly, during manufacture, use, and disposal (Cadogan et al., 1993). PAEs can be eliminated from several environmental matrices by different biotic and abiotic pathways and are not expected to be highly persistent in most media (Barreca et al., 2014; Cartwright et al., 2000; Yuan et al., 2010). However, their extensive use and permanent emissions have resulted in their ubiquitous presence in the environment. PAEs have been widely detected throughout the worldwide environment, including atmospheric aerosols and air (Barreca et al., 2014; Fu et al., 2009; Wang et al., 2014; Xie et al., 2007), in municipal solid waste compost (Farrell et al., 2009), sludge from sewage and wastewater treatment (Dargnat et al., 2009; Reid et al., 2009), river and marine waters/sediments (Blair et al., 2009; Net et al., 2014; Xie et al., 2007), wastewater (Gao et al., 2014) and in drinking water (Gao et al., 2014; Liou et al., 2014). Indoor air where people spend 65-90% of their time is also highly contaminated by various PAEs released from plastics, consumer products within homes, suspended particulate matters and house dusts (Pei et al., 2013; Wang et al., 2014).

A large variety of field and laboratory studies reveal high exposure and evident toxicity of PAEs affecting human health and ecosystems functionning (Cartwright et al., 2000; Kolena et al., 2014). Due to their potential health and environmental risk, PAEs have become a matter of worldwide concern. The use of PAEs is now subject to stricter control and some PAEs have been prohibited or their reduction in numerous products has been recommended (Bette, 2007; Official Journal of the European Communities, 1999). The constraint on industrial wastewater discharges and stricter regulation on the release of PAEs, the quantification of their contamination levels in the environment has become a necessity. In addition, for removal purposes, for the protection of water resources and in the general environment, different environmental matrices should be monitored. However, PAEs are ubiquitous in the laboratory (air, products, reagents, solvents); analysis of real samples with a low PAE background can be difficult. This review provides a summary of the literature data on the most performance methods of pretreatment and quantification recently developed for analysis of PAEs in different environmental matrices. It provides also some useful information to avoid overestimating PAE concentrations. A list of acronyms and abbreviations used in this review is provided in Table 1S in Supporting Information.

1. Quality control and quality assurance

Several methods of extraction and analysis that can be applied with good efficiency for determination of PAE concentrations in environmental matrices are briefly presented in Table 1. One of the main problems for PAEs analysis is the risk of contamination, as PAEs are ubiquitous and could be present in water, organic solvents, air, glassware and in the plastic material used for the analysis. Thus, the primary issue for the quantification of PAEs is not the trace analysis itself but the risk of contaminating the environmental samples during the analytical procedure, which can often lead to false positive or overestimated results (Fankhauser-Noti et al., 2007; Marega et al., 2013). Contamination can occur at different stages including during field sampling, sample preparation and up to the chromatographic analysis itself. In real samples, a high background can be observed for the analysis of PAEs. Sample contamination can occur throughout the different steps of the procedures as well (e.g., extraction, transfer or storage). All the steps must be subjected to strict quality control procedures. There are not reliable methods to carry out in situ analysis of PAEs in the environment. All samples should be transported to the laboratory within 24 h. Water samples should be stored at 4°C, and solid matrix samples (i.e., sediment, sludge, suspended solid matter (SSM), atmospheric particle retained on filter, soil, etc.) should be kept at

-20°C. The analysis should be performed as soon as possible. In this section, some useful information about the material preparation, procedural blanks, recoveries studies and the quantification of PAEs are presented.

1.1. Materials and chemical preparation

Contamination from the ambient air of the laboratory can be significant. Concentrations of DnBP, DiBP and DEHP in laboratory air have been reported between 0.37 and 3.0 $\mu g/m^3$ (Baram et al., 2000; Fankhauser-Noti et al., 2007), which can cause contamination of glassware and solvents. To avoid overestimating PAE concentrations during sampling and the experiment, it is recommended to avoid the personal use of hand creams, perfumes, deodorants, and any cosmetic products that contain PAEs (Félix-Cañedo et al., 2013). Ideally, a room dedicated to the analysis of PAEs with a purified air filter should be used. All the materials handled during sampling and sample treatment should be made of glass, Teflon, polytetrafluoroethylene, aluminum or stainless steel. To minimize PAEs contamination, rigorous control measures are required to prevent sample contamination and to maintain a low background concentration. These procedures include prewashing the laboratory material and equipment. All laboratory glassware should be washed with an appropriate organic solvent such as cyclohexane, n-hexane, isooctane, methanol or 2,2,4-trimethylpentane (Hashizume et al., 2002; Tienpont et al., 2004). An acidic solution such as hydrochloric acid, sulfochromic mixture or mixture of ammonium persulfate and sulfuric acid (Cincinelli et al., 2001; Dargnat et al., 2009; Mousa et al., 2013) or a 1 M potassium hydroxide solution (Baram et al., 2000) can also be used.

The glassware should be calcinated at 450-550°C overnight to remove organic materials. The use of plastic materials throughout the procedure is absolutely prohibited (Teil et al., 2007). Moreover, the adsorption of PAEs on the glassware walls can be minimized by calcination (Blair et al., 2009; Dévier et al., 2013; Fankhauser-Noti et al., 2007; Félix-Cañedo et al., 2013; Marega et al., 2013; Teil et al., 2007). The glassware should be washed and kept in an appropriate box with a lid (glass or PTFE) and/or calcinated aluminium to avoid the adsorption of PAEs from ambient air (Tienpont et al., 2004). Possible souces of contamination can also be derived from SPE cartridges, filters, vial caps, syringes and septa.

PAEs have been reported in some commercial organic solvents. For example, DnBP and DEHP have been measured on the order of 100 µg/L in hexane (Fankhauser-Noti et al., 2007). For this reason, all solvents used should be of high purity and should be pre-checked for the presence of PAEs. To increase its purity, organic solvents can be distilled (Cincinelli et al., 2001) or pre-baked aluminum oxide can be added at 3% (w/v) (Fankhauser-Noti et al., 2007; Luo et al., 2012; Wu et al., 2013). Attention should also be given to the use of deionized water, which can sometimes contain a significant amount of PAEs (Cao et al., 2008; Hashizume et al., 2002). Other chemical products, such as salts (e.g., aluminium oxide, silica, sodium carbonate, sodium chloride, sodium sulfate) should be decontaminated by calcination at 400-550°C from 4h to overnight (Cao et al., 2008; Teil et al., 2007).

1.2. Procedural blank

The first step of PAEs quantification is quality control and quality assurance. Quality control should be routinely implemented to minimize the risk of sample contamination. Analytical blanks for each step of the procedure should be performed to track the source of sample contamination and thus find an appropriate solution, if required. The blank should be free of targeted compounds or they should be present at low levels. A blank must be used at each step of the sample treatment (i.e., extraction, purification and pre-concentration) or, at the very least, one blank for the entire analytical procedure could be used in triplicate. The blank should be free from any targeted PAEs to ensure that no significant contamination occurs during the procedure. Moreover, to minimize the error of quantification, procedural blanks should be extracted together

with each set of the samples measured in triplicate. Method blanks and field blanks are strongly recommended for each environmental sample batch. DnBP and DEHP are found frequently in procedural blanks. If they are present at low concentrations, which account for less than a few % of those in the targeted sample, it is not necessary to subtract them from the sample measurement. However, if they are present at significant levels, they must be eliminated or subtracted from the sample measurement. It is also noteworthy that deionized water from purification systems (e.g., Milli-Q RG, Millipore, USA) can contain PAEs. The common background contamination was estimated at 0.02, 0.15, 0.005 and 0.49 µg/L for DEP, DnBP, BBzP and DEHP, respectively (Prokůpková et al., 2002). The DEHP concentrations in blanks can be up to 90-1640 ng/L, with a mean value of approximately 500 ng/L (11 laboratories) (INERIS, 2009).

1.3. Quantification of concentration

The quantification of PAEs can be performed either with an external or internal standard. Nevertheless, the use of internal standard(s) is strongly recommended because of the many steps required between the initial sampling and final analysis. The loss of targeted compounds could be significant during the different experimental steps (i.e., extraction, purification, pre-concentration, transfer, storage). For example, PAEs with short alkyl chain lengths (i.e., DMP, DEP) are quite volatile, and thus their loss during the pre-concentration step could be significant. Using an internal standard allows one to correct for the eventual loss of each targeted compound. Additionally, it allows one to correct for the error caused by variations of the injected volume and the response of the detector, especially when the analysis is performed using the GC-MS. In addition to the advantages mentioned, the internal standard allows one to monitor matrix effects. The choice of an appropriate internal standard is important for precise quantification. For these reasons, the use of deuterated analogs of the targeted compounds as internal standards is generally recommended. The internal standards that are most often used and proved to be efficient for the GC quantification of PAEs are: DiPhP, DnPhP, DnBzP, dimethyl isophthalate DMIP, benzyl benzoate or deuterated PAEs (DMP-d4, DEP-d4, DnBP-d4, BBzP-d4, DEHP-d4, DiDP-d4, BEHP-d4, DHxP-d4, DnPhP-d4, DnOP-d4 and DiNP-d4) (Table 1).

The linear range and limits of detection/quantification (LOD/LOQ) should be studied initially. Generally, the LOD of PAEs using the performance methods cited in table 1 gives satisfactory values, ranging from less than 1 µg/kg to dozens of µg/kg dw for solid matrices (i.e., soil, sludge and sediment) and from less than 10 ng/L to dozens ng/L for liquid matrices (i.e., surface water, wastewater). For more precise measurements, a procedural blank and a spiked matrix sample are strongly recommended, and both should be performed in duplicate (at least) with each set of samples.

1.4. Recoveries studies

Recoveries of targeted PAEs and internal standards (if any) in the matrix of interest should be evaluated initially by spiking a certain amount of standard mixture, with a concentration similar to those in the real samples, into the matrix and performing the entire analytical procedure. Spike recovery rates should be within acceptable limits to ensure either good efficiency and no significant loss or interference during the procedure. The recoveries of PAEs in real sample can be different for one PAE to another, which might be affected by the organic contents of blank matrices and the extraction efficiency of the method used. To date, many performance methods for quantifying PAEs in different environmental matrices have been developed, and the extraction yield are generally very satisfactory as presented in table 1.

1.5. Sample storage and transport

After sampling, the water samples are stored and transported in aluminium or stainless steel containers at 4°C (Caroli et al., 2011; Furtmann, 1994; Wu et al., 2013). PAEs are biodegradable in aqueous media. Nevertheless, many authors have reported superior preservation of water samples by stabilizing them and by limiting bacterial growth following the addition of either sodium azide (500 mg/L sample) (Fromme et al., 2002; Tienpont, 2004) or an acid (e.g., hydrochloric acid to pH 2, commercial formic acid to pH 2.5, nitric acid 0.01 M, or sulfuric acid at 3 % to pH 2-3) (Blair et al., 2009; Félix-Cañedo et al., 2013; Huang et al., 2008; Vogelsang et al., 2006). Liquid samples should be stored in a refrigerated chamber at 4°C (± 3°C) in darkness and treated (i.e., extraction, analysis) as soon as possible within a maximum period of 14 days to reduce losses by adsorption on the walls of the container (EPA, 1995). While solid sample should be stored at -20°C until the treatment can be performed (He et al., 2013; Liou et al., 2014; Wang et al., 2013).

2. Extraction or pretreatment techniques

2.1. Water sample

Many different methods could be applied to determine the concentration of PAEs in water. To collect wastewater from WWTP, 1 L aluminium sample bottles were chosen (Dargnat et al., 2009). Amber glass bottles can also be used. To collect seawater, it is strongly recommended to use a Go-Flo bottle that is coated with Teflon rather than a Niskin bottle. Using Teflon minimizes the degree of contamination. Moreover, when collecting the water sample at a depth of 10 m (Dargnat et al., 2011; Wurl, 2009), for example, the sample should be kept in a closed system, which limits its interaction with the atmosphere.

Among the large variety of extraction methods, the methods most often used and that have shown good efficiency are liquid-liquid extraction (LLE), solid-phase micro-extraction (SPME) and solid-phase extraction (SPE). Other recent extraction methods for PAEs from aqueous matrices have been developed; for example, the LLE associated with a large volume injection (LVI), the liquid phase microextraction (LPME) (Farahani et al., 2008), and the microextraction by liquid-liquid dispersion (DLLME) (Yan et al., 2010). PAEs are adsorbed on SSM, approximately 70 % of DnOP, 55 % of DEHP and 10-20 % of other PAEs (Furtmann, 1994). Consequently, the quantification should be performed both on the dissolved and particulate phases to better represent the global contamination and their distribution in the water column.

2.1.1. Liquid-liquid extraction (LLE)

The LLE technique consists of adding organic solvent (approximately 50 to 200 mL) into the aqueous sample (500 to 1000 mL, in general) and shaking the contents. This step collects the maximum of PAEs in the organic phase following the decantation step. Cai et al. (2007) reported that propanol was the best solvent for the extraction of PAEs from water. In this case, organic salts must be added to the mixture to separate the two phases (i.e., the water and organic solvent) because propanol is soluble in water. To allow the best phase separation, ammonium sulphate should be added (Cai et al., 2007). However, good efficiency can also be obtained by using hexane and/or DCM, which are non-miscible with water (Gao et al., 2014; Liu et al., 2013; Net et al., 2014). Furthermore, the addition of an organic modifier (e.g., 50 % methanol) can be necessary for the extraction of the most apolar PAEs such as DEHP and DnOP (Bergström et al., 2007). For successive extractions of the same sample (n=1-3), recovery yields above 80 % are generally obtained (Table 1).

In the presence of SSM, the LLE technique is feasible without separating SSM from water. The resulting emulsion involving water and SSM can be removed by various techniques (e.g., EPA-Method 506 (EPA, 1995)) including centrifugation, the addition of salts (e.g., 20-150 g of NaCl per liter of water) (Adewuyi et al., 2012; Hashizume et al., 2002), ultrasound, freezing or

vigorous stirring. However, the presence of emulsions can affect the extraction efficiency of the compounds present in the SSM. With for exception of DMP, Farahani et al. (2008) showed that the addition of salt (NaCl) does not always improve the efficiency of the extraction of analytes.

Using non-miscible organic solvent allows one to avoid the addition of organic salt. This approach saves time and involves less preparatory steps, which could be a source of sample contamination. In this regard, Method 8061 of the US-EPA is the most often used approach (Gao et al., 2014; Liu et al., 2013; Zeng et al., 2008a, b). For this method, 2 L of water should first be filtered with 0.7 µm glass fiber filters, spiked with the internal standard, and then extracted with 3×100 mL of DCM. Traces of water can be eliminated with sodium sulphate and then solvent exchanged with 1 mL hexane prior to GC-MS analysis. Overall, the LLE technique is simple to implement but requires the use of a large volume of organic solvents (up to 500 mL) and thus expensive. Additionally, the LLE technique is very labor intensive and time consuming. It requires the use of many pieces of glassware, which further increases the potential for sample contamination.

2.1.2. Solid phase micro extraction (SPME)

The SPME technique is a solvent-free method. It involves the use of a fiber coated with an extracting phase, which can be a liquid (polymer) or a solid (sorbent) that extracts PAEs from water. After extraction/concentration, the SPME fiber is transferred to the injection port of the separating instruments, such as GC, where thermal desorption of PAEs occurs and analysis is performed. The extraction involves the equilibrium sorption of analytes onto a microfiber coated with a hydrophilic polymer. There are numerous fiber coatings available based on the solid sorbents. Poly(dimethylsiloxane) (PDMS), which is relatively non-polar, is the most frequently used fiber. Among a large variety of fiber coatings, polydimethylsiloxane and divinyl benzene (PDMS-DVB), hand-made polyaniline, and polyacrylate fibers has been successfully used to analyze the 6 PAEs listed in the priority list of the US-EPA (Li et al., 2006a, b, c; Polo et al., 2005; Prokůpková et al., 2002). The advantage of the SPME is organic solvents-free technique, which avoids the risk of secondary contamination that may occur during the pretreatment step. Further, the fiber can be reused (for 100-300 cycles). However, it appears that the SPME method for the quantification of PAEs remains in the development phase. To date, very few data are available in the literature that have used this technique and most did not report good efficiency for all of the selected PAEs.

2.1.3. Solid phase extraction (SPE)

SPE is another extraction technique that is an alternative method to LLE. SPE has received increasing attention because of its ease of implementation, its ability to save time and solvent, ant to eliminate the emulsions. In addition, high enrichment factors are usually obtained with SPE technique. To date, SPE has been shown to be a powerful method for the extraction, pre-concentration and cleanup of water samples. Furthermore, SPE is semi-automatic and allows for the simultaneous extraction of up to 12 or 24 water samples. Briefly, PAEs are transferred from the water sample (100-1000 mL) to a previously activated solid phase. PAEs are recovered by elution with an appropriate solvent. Typical cartridge devices consist of short columns; conventionally, an open syringe barrel contains the sorbent with different particulate sizes, usually between 50-60 µm. Cartridges that have been reported to provide good extraction efficiency for PAEs are: C18, HLB, and a mixture of LiChrolut RP18 and Lichrolut EN (2.5/1 by weight) (Fromme et al., 2002; He et al., 2013; Liou et al., 2014; Zheng et al., 2014). The water sample can be extracted directly without filtration, but in most cases, filtration is a necessity step to avoid clogging, especially when the sample contains a high level of SSM. Internal standards (if any) should be spiked into the sample prior to extraction. MeOH, DCM, hexane and acetone are commonly used as eluting solvent, either as individual solvents or as mixtures (Table 1).

Magnetic SPE (MSPE) using iron-based magnetic nanotubes of carbon can be used as an alternative to SPE for the extraction of PAEs in mineral and tap waters (Luo et al., 2012). Two examples of the SPE method for the extraction and cleanup of PAEs from water samples are presented in Figure 1S in Supporting Information.

2.2. Sludge, sediment, SSM and soil samples

Based on the literature data, the extraction of PAEs from solid matrices such as sludge, SSM, sediment and soil can be performed with common methods. Common methods have been reported that extract with good efficiency PAEs in both SSM and sediment (Zheng et al., 2014), soil and sediment (Zeng et al., 2008a, b, 2009), sediment, sludge and soil (Reid et al., 2009). The analysis of PAEs in a solid matrix generally includes extraction, clean up, column fractionation and chromatographic separation. A large variety of solvents, such as acetone, acetonitrile, DCM, hexane, ethyl acetate can be used to extract PAEs with good efficiency (Table 1). The extraction of PAEs from solid environmental matrices is conventionally performed by the Soxhlet extraction technique (Meng et al., 2014; Wang et al., 2008, 2014). Soxhlet technique offers good extraction yields. However, it is time and solvent consuming and thus expensive.

Other extraction techniques have also been developed for PAEs not only to reduce the volume of solvents and extraction times but also to improve the precision of the recovery of the analytes. Such techniques include microwave-assisted extraction (MAE), supercritical fluid extraction (SFE), ultrasonic and accelerated solvent extraction (ASE) (Table 1). Among these techniques, ASE, also known as pressurized liquid extraction (PLE), has received increased attention because of its ease to implement and its ability to save time. Further, this approach allows one to extract with high pressure. This means that solvents can be heated to temperatures above their boiling points, which make them much more efficient to dissolve target compounds from their matrix. Moreover, this technique maintains constant extraction conditions and its automation provides reliable repeatability (Hubert et al., 2001; Schantz, 2006). In general, solid matrices should be dried, finely ground and sieved at 0.2-2 mm prior to extraction for better efficiency (Ma et al., 2014; Meng et al., 2014; Wang et al., 2013; Zeng et al., 2008a). For coastal and port samples, the optimum extraction yield was obtained when sediments were sieved at 0.2 mm (Muñoz-Ortuño et al., 2014). Indeed, reducing the particle size improves the extraction yield by providing better contact of the solvent with the sample. A hydromatrix or diatomaceous earth dispersing agent can be added to the sample to prevent aggregation of sample particles when using the ASE technique (Reid et al., 2009). Two protocols for analyzing PAEs from solid matrices are presented in Figure 2S in Supporting Information.

2.3. Air samples (gas and particulate phases)

Air samples can be collected on quartz fiber filters (QFFs) (25×25 cm) previously calcinated (450°C), and then stored at -20°C until the analysis is performed (Fu et al., 2013). PAEs can be collected either by pumping an air sample through ethylene glycol or directly through an activated Florisil column, with a detection limit of 10 ng per injection using GC-ECD. Passive sampling on charcoal, which is less expensive than active sampling but requires much longer sampling times, can also perform measurements in air. In this case, the detection limit is 200 ng/m^3. PAEs in the gas phase can be collected on polyurethane foam plugs (PUFs). QFFs and PUFs should be then wrapped in aluminum foil and stored in Teflon bags and kept at -20°C until the analysis is performed. PAEs in QFFs and PUFs can be extracted using the many different techniques as previously reported for solid matrices.

3. Chromatographic analysis

3.1. Direct analysis of PAEs

The identification and quantification of PAEs in environmental matrices require an appropriate pre-treatment step, as reported previously, followed by an analysis using different separation and detection techniques. PAEs can be quantified using chromatographic techniques such as liquid chromatography (LC) or gas chromatography (GC). GC equipped with mass spectrometry (MS) is the most common technique used for the determination of PAEs (Table 1). However, LC is a useful technique for analyzing non-volatile PAEs and their degradation products (Silva et al., 2004a, b). A mass spectrometer is the most common detector used; it is an efficient tool for the identification and quantification of each targeted PAE with low LOD (ng/L or <µg/kg). To achieve accurate quantification, compounds must be fully resolved from each other with a low signal-to-noise background.

3.1.1. Gas chromatography

PAEs are weakly polar compounds. The columns most commonly used for PAEs separation in GC/MS are non-polar capillary columns such as DB-5MS and HP-5MS (Table 1). Other columns such as DB-XLB, Rxi-5MS, SLB-5MS, Phenomenex XLB, Ultra-2 and DB-35 can be also used with good efficiency (Table 1). After the separation step, each compound is transported into a MS detector where compounds can be ionized with electronic impact (EI) or chemical ionization (CI) and can be detected in full scan, SIS, SIM, MS/MS or MRM mode. Programming the temperature at 50°C for 1 min until 320°C for 2 min (ramp 10°C/min) with a HP-5MS column is typical for the determination of PAEs by the GC/MS technique. These conditions are a good compromise between resolution and the run time for the PAE analysis. With a non-polar column, the separation of analytes is based on the low boiling point of the analytes (Tienpont, 2004). Table 2 presents the quantifier/qualifier ions of PAEs using a Rxi®-5ms capillary column.

3.1.2. Liquid chromatography (LC)

According to the literature data, PAEs can also be quantified using the LC. However, compared to GC/MS, a lower sensitivity is obtained with LC/MS. Indeed, LC is more appropriate for analyzing mono phthalate esters (MPEs) and degradation products of PAEs than PAEs themselves. With LC, PAEs separation is commonly achieved on an apolar C18 (octadecyl-silicagel, ODS) analytical column, using a mobile phase containing an organic solvent such as methanol or ACN and Milli-Q water, both generally buffered (e.g, with 10 mM ammonium formate, ammonium acetate) or acidified (0.05-0.1 % AcOH or TFA). However, a C8 column provides better separation peaks for the isomeric mixtures, well defined and narrower peaks than on a classical C18. Better separation can be obtained when the column is thermostated between room temperature to 80°C. Table 2S presents the columns commonly used in LC for the analysis of PAEs. MS or UV detector can perform the detection of PAEs using LC. Table 3 presents the quantifier and qualifier ions of PAEs with MS detector. By MS, PAEs can be analyzed by electrospray (ESI) (Masia et al., 2013) or atmospheric pressure chemical (APCI) (Castillo and Barcelo, 2001) ionization in positive mode.

3.2. Derivatization method

Generally, PAEs can be easily identified and quantified by direct analysis as reported in the previous section. PAEs are sufficiently volatile to be analyzed directly by GC/MS. Nevertheless, their derivatization can make them more volatile. Although this step facilitates their analysis by GC, it is used very little. The peaks of silylated derivatives in the GC chromatograms are more symmetrical and thinner than those of corresponding PAEs, and the retention times are shorter. For the derivatization technique, PAEs are first hydrolyzed using an alkaline solution of

NaOH or KOH. Following by the acidification step and the obtained phthalic acid (PA) are then extracted with organic solvents and then derivatized (e.g., by silylation as showed in Figure 1) prior to GC/MS analysis.

For the derivatization of PAEs, first, alkaline hydrolysis can be performed with 1 M NaOH, or at pH $\geq$ 12, at 90°C for 30 min or at room temperature (Kim et al., 2007; Peng et al., 2013). Following alkaline hydrolysis, the solution can be acidified with HCl to pH $\leq$ 2 and convert carboxylates into carboxylic acids. PA and alcohols obtained are usually extracted with ethyl acetate according to Kim et al. (2007). Under anhydrous conditions, these analytes can be derivatized by silylation. The derivatizing agent most commonly used is pentafluorobenzyl chloride (PFBCl). However, other derivatization reagents such as *N*-Methyl-*N*-*tert*-butyldimethylsilyltrifluoroacetamide (MTBSTFA) and *N,O*-bis(trimethylsilyl) trifluoroacetamide (BSTFA) can be used (Ballesteros et al., 2006; Félix-Cañedo et al., 2013; Fu et al., 2013; Schreiber et al., 2011). The quantifier and qualifier ions of silyl derivatives of phthalic esters are presented in Table 4. This method allows to quantifing the total PAEs with good efficiency and low LOQ. However, this technique does not allow the determination of the contamination level of individual PAE. Indeed, this derivatization technique gives the sum of concentration of PA, mono-alkyl phthalate esters, and PAEs. Thus, to determine the real contamination level PAEs, other measurement should be perfomed to quantify the concentration of PA and mono-alkyl phthalate ester present initialy in the sample.

Conclusions

To date, PAEs are the most common chemicals that humans are in contact with daily. They are ubiquitous in all invironmental compartments incuding urban and industrial effluents. In order to answer to the constraint on industrial wastewater discharges, stricter regulation on the release of PAEs and especially to minimize the health and environmental risk, the quantification of their contamination levels in the environment should be monitored. During these last few decades, there has been considerable improvement in PAEs extraction and analysis techniques. Numerous pretreatment techniques and detection methods can be now applied for identifying and quantifying these compounds in different environmental matrices throughout the worldwide environment, including atmospheric aerosols, indoor and outdoor air, in municipal solid waste compost, sludge, river and marine waters/sediments, SSM and drinking water. Generally, these compounds present in the environmental matrices at the concentration level that can be easily identified and quantified by commun techniques of extraction (i.e., LLE, SPE, SPME, ASE, Soxhlet, sonication…) and analysis (i.e., GC/MS, LC/MS). However, the problem is not the trace analysis itself but the risk of contamination during the analytical procedure due to its ubiquity in the laboratory environment/producsts/solvents/reagents, which can often lead to false positive or overestimated results. This paper is a synthesis of the extensive literature data on the most performance methods of pretreatment and quantification recently developed for analysis of PAEs in different environmental matrices. Some useful information to avoid overestimating PAEs is also reviewed. To get reliable results, stricter quality control and quality assurance must be respected.

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Table and Figure Captions

Table Captions

Table 1: Extraction technique and quantification method for the measurement of PAEs in environmental matrices.

Table 2: Ions for selected ion monitoring (SIM) of PAEs by GC/MS-EI

Table 3: Ions for selected ion monitoring (SIM) or MRM transitions of PAEs by LC/MS in positive and negative modes.

Table 4: Ions for SIM of the corresponding silyl derivatives of phthalic esters by GC/MS-EI (Kim et al., 2007).

Figure Captions

Figure 1: Hydrolysis reaction and the derivatization of PAEs by silylation (Kim et al., 2007).

Table 1: Extraction technique and quantification method for the measurement of PAEs in environmental matrices.

Target PAEs	Extraction/Pretreatment		Identification and quantification				
	Solvent (Eluent)	Technique	Internal standards /Surrogate	Column	Analyse	Yields (%)	Ref.
Water samples							
7PAEs[a]	DCM	LLE	-	DB-5	GC-FID GC-MS	-	[1]
16PAEs[b]	DCM	LLE	DiPhP, DnPhP, DnBzP, Benzyl benzoate	DB-5MS	GC-MS	78-113	[2]
15PAEs[c]	DCM	LLE	DiPhP, DnPhP, DnBzP, Benzyl benzoate	DB-35MS	GC-MS	62-112	[3]
DMP, DEP, DnBP, DEHP	DCM	LLE	Butyl benzoate	Col-Elite 5	GC-FID	82-91	[4]
15PAEs[d]	DCM	LLE	External calibration	DB-5MS	GC-MS	81-104	[5]
6PAEs[e]	DCM/Hexane	LLE	Benzyl benzoate	XLB	GC-MS	72-108	[6]
DnBP, DcHxP, DEHP	Ethyl acetate	LLE	DnBP-d4	DB-5MS	GC-MS	> 75	[7]
6PAEs[e]	Hexane	LLE	DnPhP-d4	-	GC-MS	86-114	[8]
DMP, DEP, BBzP	n-Tetradecane, can	HF-LLME	-	Ascentis-ODS	LC-UV	91-102	[9]
7PAEs[f]	1-Dodecane	LPME	Benzyl benzoate	DB-5MS	GC-MS	84-115	[10]
DnBP, BBzP, DEHP, DnOP	Toluene	MMLLE	-	DB-5	GC-FID	54-110	[11]
16PAEs[b]	Acetone	MSPE	External standard	RXi®-5MS	GC-MS	80-125	[12]
DnBP, DEHP, BBzP	Acetone	SPE	DnBP-d4, BBzP-d4, DEHP-d4	DB-XLB	GC-MS	82-106	[13]
15PAEs[d]	Acetone	DSPE	Triphenyl phosphate	HP-5MS	GC-MS	71-117	[14]
15 PAEs[d]	DCM/Acetone/MeOH	SPE	-	DB-5MS	GC-MS	71-98	[15]
6PAEs[e]	DCM/Hexane	SPE	DEP-d4, DnBP-d4, DnOP-d4	HP-5MS	GC-MS	61-108	[16]
11PAEs[g]	Ethyl acetate	SPe	DAlP	HP-1	GC-MS	91-108	[17]
8PAEs[h]	MeOH	SPE	DMP-d4, DEP-d4, DnBP-d4, BBzP-d4, DEHP-d4, DiNP-d4, DnOP-d4, DiDP-d4	Eclipse-plus-C18	UHPLC-ESI-MS/MS	65-135	[18]
8PAEs[h]	MeOH	SPE	External calibration	C18	LC–ESI-MS/MS	-	[19]
BBzP, DEHP	MeOH/DCM	SPE	DBP, DnOP	RP-18	LC-UV	99-104	[20]
DMP, DAlP, DnBP, BBzP, DcHxP, DEHP	C_6H_5Cl	DLLME	-	DB-5MS	GC-MS	68–89	[21]
DnBP	Solvent-free	SPME	Benzyl benzoate	DB-5MS	GC-FID	-	[22]
6PAEs[e]	Solvent-free	SPME	External calibration	DB-35	GC-ECD	0-116	[23]
6PAEs[e]	Solvent-free	SMPE	External calibration	DB-35	GC-ECD GC-MS	-	[24]
6PAEs, 4MPEs[i]		SPME	MEP-d4, MBP-d4, DEP-d4, DBP-d4	HP-5MS	GC-MS	-	[25]
11PAEs[j]	-	SPME	DMP-d4, DEP-d4, DnPrP-d4, DnBP-d4, DnHxP-d4, BBzP-d4, DEHP-d4, DBzP-d4	HP-5MS-UI	GC-MS	-	[26]
6PAEs[k]	DCM/ Hexane	SPME	3,5-Di-*tert*-butyl-4-hydroxyanisol	DB-5	GC-FID	78-116	[27]
DnBP	Without pre-treatment		Benzyl benzoate	C18	LC-UV	-	[28]
Groundwater and drinking water (tap, bottled water)							
6PAEs[e]	DCM	LLE	DnOP-d4	Rtx-5MS	GC-MS	70-94	[29]
5PAEs[l]	DCM	LLE	-	TG-5MS	GC-MS	-	[30]
6PAEs[e]	DCM, hexane	LLE, SPE	-	DB1, DB-5	GC/FID		[31]
BBzP, DEHP	Acetone	SPE	Internal calibration	DB1	GC-MS	-	[32]
5PAEs[m]	Ethyl acetate	SPE	DEHP-d4	Rxi-5MS	GC-MS	-	[33]

8PAEs[n]	-	SPME	DMP -d4; DEP-d4, DnBP d4 ; DEHP d4 ; DnOP-d4	DB-5MS	GC-MS	-	[34]
Wastewater samples							
6PAEs[e]	Hexane/DCM	LLE	External calibration	HT8	GC-ECD	68-84	[35]
6PAEs[e]	Hexane/DCM	LLE	External calibration	HT8	GC-ECD	68-84	[36]
5PAEs[o]	DCM	LLE	n-Butyl benzoate	Zorbax Eclipse XDB C18	LC-UV	57-97	[37]
6PAEs[e]	MeOH/Diethylether	SPE	Internal calibration	ZB-5MS	GC-MS	95-106	[38]
6PAEs, 4 MPEs[l]	-	SPME	MEP-d4; MBP-d4; DEP-d4; DBP-d4	HP-5MS	GC-MS	-	[25]
DEP, DEHP	Hexane, DCM, MeOH	SSPE	External calibration	Hypersil Green ENV	LC-MS	69-71	[39]
Seawater samples							
DnBP, DHxP, DcHxP, DEHP	Ethyl acetate	LLE	DnBP-d4, DEHP-d4	DB5-MS	GC-MS	> 75	[7]
DEP, MEP	Hexane	LLE	-	HP-5	GC-FID/GC-MS	-	[40]
15PAEs[c]	Acetone	DSPE	Triphenyl phosphate	HP-5MS	GC-MS	71-117	[14]
DEP, DnPrP, DiBP, DcHcanACN	SPE	-	Zorbax Eclipse XDB C8	LC-UV	80-104	[41]	
10MPEs[p]	Ethyl acecane, ACN	SPE	MEP-^{13}C4, MnBP-^{13}C4, MEHP-^{13}C4, MiNP-^{13}C4	Synergi RP-MAX C12	LC-MS	50-72	[42]
DEHP	Methanol	SPE	-	C18	LC-UV	70	[43]
DEP, DnBP, BBzP	-	EE-SPME	-	HP-1	GC-MS	74-93	[44]
Sediment							
5PAEs[q]	DCM/Acetone	ASE	-	Pinnacle™ II Phenyl	LC-6AD	83-92	[45]
6PAEs[e]	Ethyl acetate	ASE	DBzP, Benzyl benzoate	DB-5MS	GC-MS	77-102	[46]
10MPEs[p]	AcOH /MeOH	ASE/SPE	MEP-^{13}C4, MnBP-^{13}C4, MEHP-^{13}C4, MiNP-^{13}C4	Synergi RP-MAX C12	LC-MS	83-99	[42]
15PAEs[c]	-	MAE	-	DB-5MS	GC-MS	84-109	[15]
DnBP, DEHP BBzP	Cyclohexane/Ethyl acetate	Soxhlet	DnBP-d4, BBzP-d4, DEHP-d4,	DB-XLB	GC-MS	71-102	[13]
16PAEs[b]	DCM	Soxhlet	DiPhP, DnPhP, DnBzP, Benzyl benzoate	DB-5MS	GC-MS	71-108	[2]
DMP, DEP, DnBP, DEHP	DCM	Soxhlet	Butyl benzoate	-	GC	89-90	[4]
16PAEs[b]	DCM	Soxhlet	DiPhP, DnPhP, DnBzP, benzyl benzoate	DB-5MS	GC/MS	77-109	[47]
6PAEs[e]	Hexane/DCM	USE	DMP-d4, DnBP-d4, DnOP-d4	C8	LC/ESI-MS	71-106	[48]
				DB-5	GC/MS		
Sludge samples							
5PAEs[o]	DCM/Acetone	ASE	-	Pinnacle™ II Phenyl	LC-6AD	83-92	[45]
DEHP	Hexane	Sonication -assisted	*tert*-butylphenol	HP-5MS	GC-MS	105±8	[49]
DnBP, BBzP, DEHP	Cyclohexane/Ethyl acetate	Soxhlet	DnBP-d4, BBzP-d4, DEHP-d4	DB-XLB	GC-MS	71-102	[13]
16PAEs[b]	DCM	Soxhlet	DMP-d4, DEP-d4,DnBP-d4, DEHP-d4	HP-5MS	GC-MS	74-100	[50]
6PAEs[e]	DCM	Volatilisation/condensation	External calibration	HT8	GC-ECD	68-84	[36]
Soil samples							
12PAEs[r]	ACN	ASE	2-Methylanthracene	LiChroCART RP-18	LC-UV	82-92	[51]
DEHP	DCM	ASE	DEHP-d4	ZB-5MS	GC-MS	90	[52]
5PAEs[o]	DCM/Acetone	ASE	-	Pinnacle™ II Phenyl	LC-6AD	83-92	[44]
DiNP, DEHP	n-Hexane	ASE	DEHP-d4	Rxi-5ms	GC-MS	99±11	[53]
6PAEs[e]	Acetone/Hexane	Centrifiga	DnBP-d4	DB-5	GC-MS	80-113	[54]

		tion					
7PAEs[w]	DCM	SLE	DnBP-d4, BBzP-d4, DEHP-d4, DnOP-d4	DB5-MS	GC-MS	-	[55]
16PAEs[b]	DCM	Soxhlet	DiPhP, DnPhP, DnBzP	DB-5MS	GC-MS	76-111	[56,57]
DnBP, DEHP	DCM/Acetone	USE	-	DB-5MS	GC-FID	≥ 98	[58]
Air							
DEHP, BBzP	DCM	Soxhlet	-	DB-5MS	GC-MS	-	[21]
DiBP, DEHP, DNP	DCM	Soxhlet (QFFs, PUFs)	DiPhP, DnPhP, DnBzP, Benzyl benzoate	HP-5	GC-MS	> 71	[59]
6PAEs[e]	DCM	Soxhlet	DEHP-d4	HP-5MS	GC-MS	75	[60]
16PAEs[b]	DCM	Soxhlet	DiPhP, DnPhP, DnBzP, Benzyl benzoate	DB-5MS	GC-MS	72-121	[61]
17PAEs[s]	DCM	Soxhlet	-	HP-5MS	GC-MS	73-94	[62]
6PAEs[t]	DCM** Hexane/Diethylether*	Soxhlet	DBzP	HP-5MS	GC-MS	86-118** 80-140*	[63]
14PAEs[u]	Hexane/DCM/MeOH	Soxhlet	DnBP-d4, DEHP-d4	HP-5MS	GC-MS	72-105* 82-105**	[64]
6PAEs[t]	Acetone	SPE air sampling	^{13}C-DnPeP	DB-5MS	GC-MS^2	>90-100	[65]
DnBP, DEHP	Acetone/Hexane/MeOH/Carbon disulfide	Sep-Pak PS Air cartridge	External calibration	HP-5MS	GC-MS	94-102	[66]
6PAEs[e]	DCM	USE	Benzyl benzoate	HP-5MS	GC-MS	78-116	[67]
6PAEs[e]	DCM/Acetone	USE	-	DB-5	GC	92-115	[58]
15PAEs[c]	DCM/Acetone	USE	External calibration	DB-5MS	GC-MS	84-107	[5]
15PAEs[c]	Hexane	USE	DEP-d4, DHxP-d4, DEHP-d4	SLB-5MS	GC-MS	-	[68]
BBzP, DEHP	Adsorption tubes (glass, 300mg Tenax TA)		-	DB-1701	TD-GC-MS	-	[69]
7PAEs[v]	Adsorption tubes (Tenax TA)		External calibration	ZB-5	TD-GC-MS	-	[70]
Marine aerosols							
DEHP	DCM/MeOH	LLE	C13 n-alkane	DB-5MS	GC-MS		[71]

*Gas-phase ; ** Particulate phase

a. 7PAEs : DMP, DEP, DiPrP, DnBP, DEHP, DnOP, DiOP
b. 16PAEs : DMP, DEP, DiBP, DnBP, DMGP, DMPP, DEEP, DnAlP, DnHxP, BBzP, HEHP, DBEP, DcHxP, DEHP, DnNP, DnOP
c. 15PAEs : DMP, DEP, DiBP, DnBP, DMEP, BMPP, DEEP, DnPeP, DHxP, BBzP, DBEP, DcHxP, DEHP, DnOP, DNP
d. 15PAEs : DMP, DEP, DPrP, DiBP, DnBP, DAlP, DHxP, BBzP, DEHP, DnOP, BMEP, BMPP, DEEP, DBEP, DcHxP
e. 6PAEs : DMP, DEP, DnBP, BBzP, DEHP, DnOP
f. 7PAEs : DMP, DEP, DAlP, DnBP, BBzP, DcHxP, DEHP
g. 11PAEs : DMP, DEP, DPrP, DnBP, DAlP, BBzP, DcHxP, DEHP, DnOP, BMPrP, DMPrP
h. 8PAEs : DMP, DEP, DnBP, BBzP, DEHP, DnOP, DiNP, DiDP
i. 6PAEs : DMP, DEP, DnBP, BBzP, DEHP, DOP and 4MPEs : MMP, MEP, MBP, MEHP
j. 11PAEs : DMP, DEP, DiPrP, DnPrP, DnBP, DnHxP, BBzP, DcHxP, DEHP, DnOP, DBzP
k. 6PAEs : DMP, DEP, DiPrP, DiBP, DnBP, DEHP
l. 5PAEs : DEP, DiBP, DnBP, BBzP, DEHP
m. 5PAEs : DMP, DEP, DiBP, DnBP, DEHP
n. 8PAEs : DMP, DEP, DiBP, DnBP, BBzP, DHxP, DEHP, DnOP
o. 5PAEs : DMP, DEP, DnBP, DPhP, DEHP
p. 10MPEs : MMP, MEP, MnBP, MBzP, MEHP, MnOP, MiHxP, MiHpP, MiNP, MiDP
q. 5PAEs: DMP, DnBP, DEHP, DiNP, DiDP
r. 12PAEs : DMP, DEP, DiPrP, DnBP, BBzP, DnPeP, DHxP, DHpP, DEHP, DnOP, DNP, DDP
s. 17PAEs : DMP, DEP, DiBP, DnBP, DMEP, BMPP, DEEP, DnPeP, DHxP, BBzP, DBEP, DcHxP, DEHP, DnNP, DiNP, DPhP, DnOP
t. 6PAEs : DMP, DEP, DiBP, DnBP, BBzP, DEHP
u. 14PAEs : DMP, DEP, DAlP, DiBP, DnBP, DnPeP, BBzP, BOP, DHxP, DiOP, DnOP, DEHP, DiNP, DiDP
v. 7PAEs : DMP, DEP, DiBP, DnBP, BBzP, DEHP, DnOP
w. 7PAEs : DnBP, DnPeP, BBzP, DEHP, DnOP, DnNP, DiNP

References: [1]Espadaler et al., 1997; [2]Zeng et al., 2008a; [3]Liu et al., 2013; [4]Fatoki et al., 2010; [5]Das et al., 2014; [6]Net et al., 2014; [7]Kim et al., 2007; [8]Gao et al., 2014; [9]Chao et al., 2013; [10]Farahani et a., 2008; [11]Bergström et al., 2007; [12]Luo et al., 2012; [13]Fromme et al., 2002; [14]Wu et al., 2013; [15]Zheng et al., 2014; [16]He et al., 2013; [17]Furtmann, 1994; [18]Liou et al., 2014; [19]Yang et al., 2014; [20]Jara et al., 2000; [21]Farahani et al., 2007; [22]Li et al., 2006a; [23]Prokůpková et al., 2002; [24]Holadová et al., 2007; [25]Alzaga et al., 2003; [26]Dévier et al., 2013; [27]Batlle and Nerín, 2004; [28]Li et al., 2006b; [29]Amiridou and Voutsa, 2011; [30]Dumitrascu, 2013; [31]EPA, 1995; [32]Félix-Cañedo et al., 2013; [33]Bach et al., 2013; [34]Cao, 2008; [35]Teil et al., 2007; [36]Dargnat et al., 2009; [37]Adewuyi, 2012; [38]Ballesteros et al., 2006; [39]Castillo and Barcelo,1999; [40] Peng et al., 2013; [41] Cai et al., 2003; [42] Blair et al., 2009; [43] Bell and Barsh, 2010; [44] Mousa et al., 2013; [45]Reid et al., 2009; [46]Huang et al., 2008; [47]Sun et al., 2013; [48]Lin et al., 2003; [49]Aparicio et al., 2007; [50]Meng et al., 2014; [51] hang et al., 2010; [52]Rhind et al., 2013; [53]Cousins et al., 2014; [54]Wang et al., 2013; [55]Vikelsøe et al., 2002; [56]Zeng et al., 2008b; [57]Zeng et al., 2009; [58]Xu et al., 2008; [59]Huang et al., 2013; [60]Xie et al., 2005; [61]Zeng et al., 2010; [62]Wang et al., 2014; [63]Xie et al., 2007; [64]Wang et al., 2008; [65]Bergh et al., 2011; [66]Toda et al., 2004; [67]Kong et al., 2013; [68]Barreca et al., 2014; [69]Choi et al., 2010; [70]Aragon et al., 2013; [71]Fu et al., 2013; [72]Serôdio et al., 2006; [73]Tienpont, 2004; [74]Schiedek, 1995; [75]Guo et al., 2013; [76]Bergé, 2012; [77]Litz et al., 2003; [78]Schreiber et al., 2011; [79]Khedr, 2013; [80]Castillo and Barcelo, 2001.

Table 2: Ions for selected ion monitoring (SIM) of PAEs by GC/MS-EI.

Analyte	Quantifier ion (abundance)	Qualifier ions (abundance)	Reference	Analyte	Quantifier ion (abundance)	Qualifier ions (abundance)	References
DMP	163 (100)	194, 135, 77	[12]	DEHP	167 (36)	279 (9.8), 149 (100)	[7]
		194(15), 135(15)	[29]		149 (100)	279, 167, 113	[12]
		194, 133	[38]			279 (8.8), 167 (34)	[13,29,32,34]
		194, 77	[34]			279	[10,38]
		194	[10,25,73]			167, 57	[30]
		77	[33,72,75]			167	[26,33,25]
			[26]		129	112	[72]
DEP	149 (100)	222, 177, 121	[12]	DPhP	225	197, 153, 77	[12]
		222 (1.6), 177 (23)	[76,77]	DBzP	149	108	[26]
		177, 76	[34]	BBzP	149 (100)	312(1), 206(22)	[77]
						238, 206, 91	[12]
		177 (28)	[10,25,26,29, 38,72,73,75]			238 (5), 206 (25)	[76]
		177, 65	[30]			206, 91	[34,73]
			[33]			206	[10,13]
BMEP	59	251, 193, 149	[12]			205 (21.5), 91 (71.5)	[29]
BEEP	45	149, 121, 72	[12]			205	[38]
BBEP	149	249, 193, 57	[12]			91, 65	[30]
DnPrP	149 (100)	209 (5.9), 191 (6.9)	[77]			91	[26,72,75]
DiPrP	149		[26]	DiHpP	149	265	[73]
DnBP	149 (100)	278 (1.0), 223 (7.4), 205, 121	[12]	DnOP	149 (100)	279, 261, 179	[12]
		223 (5.5), 205 (4.4)	[13,25,29,76]			279 (6.6), 207 (4.4)	[77]
		223, 104	[74]			279, 150	[34,38,72]
		223	[10,73]			279 (18.0)	[29,75]
		205	[75]			167	[26]
		150	[72]	DiNP	293	149, 71, 57	[12]
		147, 73	[30]			149	[73]
			[26,33]	DiDcP	307	149	[73]
DiBP	149 (100)	223, 205, 167	[12]		149 (100)	307 (6.4)	[77]
		223 (7.4), 205 (1.9)	[77]	DUP	149 (100)	321 (5.4)	[77]
		223, 57	[34]	DMIP	163	194, 133	[74]
		223	[73]	DMP-d4	167		[26,34]
		57, 41	[30]	DEP-d4	153	181	[25]
			[33]				[26,34]
DPeP	149	237, 219, 167	[12]	DiPrP-d4	153		[26]
		237	[73]	DnBP-d4	153 (100)	209, 227	[13,25]
BMPP	149	251, 167, 121	[12]			227 (6.3)	[7,26,34,73]
DAlP	149	189	[10,73]	DnHxP-d4	153		[26]
DnHxP	149 (100)	251 (11), 233 (3.3)	[7]	DEHP-d4	153 (100)	171 (31), 283 (14)	[13]
		251, 104, 76	[12]			171 (41)	[7,33]
		251, 43	[34]				[26,34]
			[26]	DBzP-d4	153		[26]
DcHxP	149 (100)	269, 167, 83	[12]	BBzP-d	153	210	[13]
		249 (17), 167 (32)	[7,73]				[26]
		167 (32), 249 (5.5)	[77]	DnOP-d4	153 (100)	283 (17)	[29,73]
		167	[10,26]				[34]

References: see indication in Table 1.

Table 3: Ions for selected ion monitoring (SIM) or MRM transitions of PAEs by LC/MS in positive and negative modes.

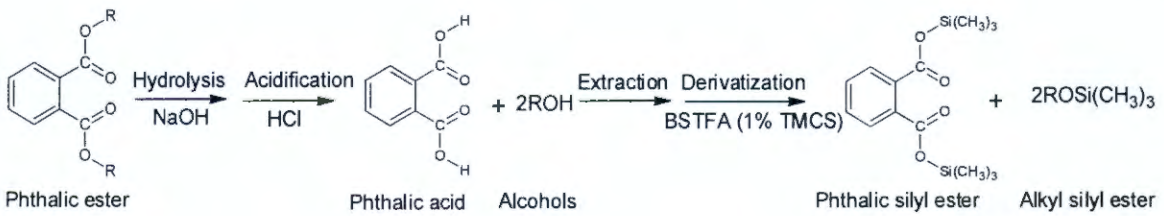
Analyte	Quantifier ion Q1	Qualifier ion Q3	Reference
Positive mode			
DMP	195	163, 133	[78]
DEP	149	177, 223	[43]
	223	149, 177	[78]
BMEP	283	207, 59	
BEEP	311	221, 149	
DnPrP	251	149, 191	
DiPrP	251	149, 191	
DnBP	279	149, 205	
	149		[80]
DiBP	279	149, 205	[78]
DnPeP	307	219, 149	
DiPeP	307	219, 149	
BMPP	335	167, 251	
DAlP	247	189, 149	
BBEP	367	101, 249	
DnHxP	335	149, 233	
DcHP	331	167, 249	
DEHP	149	167, 391	[43,80]
	391	167, 279	[78]
	413.8	414.8	[79]
DPhP	319	225, 77	[78]
BBzP	313	149, 205	
DiHpP	363	149, 233	
DnOP	391	261, 149	
DiNP	419	275, 149	
DiDcP	447	149, 289	
Negative mode			
DEHP	277		[73]

References: see indication in Table 1.

Table 4: Ions for SIM of the corresponding silyl derivatives of phthalic esters by GC/MS-EI (Kim et al., 2007).

Analyte	Quantifier ion (abundance)	Qualifier ion (abundance)
DBP-SE	131 (100)	103 (23), 145 (72)
DHP-SE	159 (100)	103 (42), 115 (5.0)
DCHP-SE	157 (97)	129 (100), 172 (23)
DEHP-SE	187 (80)	103 (100), 202 (0.1)
DBP-d4	295 (17)	147 (100), 310 (2.0)
DEHP-d4	153 (100)	227 (6.3)

Figure 1: Hydrolysis reaction and the derivatization of PAEs by silylation (Kim et al., 2007).



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Bis (2-Ethylhexyl) Phthalate or BEHP Investigation

Job	**1690000126**
Client	**U. S. Steel Fairfield**
Date	**January 17, 2018**
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1. Background

1.1 Permit Related

The current U. S. Steel Fairfield, Alabama Facility ("USS Fairfield") NPDES Permit was issued in March 2017 with an effective date of April 1, 2017. The Permit contains the following monitoring requirements and numerical limits for Bis (2-Ethylhexyl) Phthalate ("BEHP") for DSN026.

- Daily Maximum: 0.00181 mg/L or 1.81 µg/L limit
- Monthly Average: Report only requirement
- Monitoring Frequency: Monthly
- Sample Type: Grab

Per the Permit Rationale, BEHP data collected under the previous permit cycle exhibited a reasonable potential to exceed the human health criteria for certain receiving water classifications. This evaluation was performed with composite sample data collected under the previous permit cycle. The previous Permit contained monitor only requirements for BEHP with monthly composite sampling. Due to concerns with BEHP contamination from composite sampling equipment (e.g. tubing), the sample type was changed to grab in the renewed Permit. However, even with the switch in sample type, detectable levels of BEHP were observed in the USS Fairfield DSN026 samples. Subsequently exploratory sampling plans and material reviews have been carried out in order to investigate these detections. The plans and results are described in Sections 2 and 3 of this memo.

1.3 BEHP Analysis Concerns

The most common use of BEHP is as a plasticizer; it is added to plastics to make them flexible. BEHP is used in a variety of consumer materials especially those with PVC components. Many of the materials common to analytical labs and environmental sampling equipment (e.g. disposable pipets, rinse bottles, certain sample bottles and caps, certain gloves, composite sample tubing) are often made with BEHP.

As a result, incidental BEHP contamination from collection and lab equipment is an ongoing issue with BEHP analysis (for many facilities, not just USS Fairfield) especially as lower detection limits are required. For ubiquitous lab contaminates such as Bis (2-ethylhexyl) phthalate, when the sample result is <5X the blank result it's common to conclude that the sample result is due to (or influenced by) contamination. Although less common, blank subtraction has also been used to minimize the impacts of incidental contamination.

A further complicating factor for USS Fairfield is the required method sensitivity. For most methods the reporting limit (or quantification limit) is 3-5X the method detection limit. However, in the case of the BEHP analyse for USS Fairfield, the reporting limit is only 1.4X the method detection limit. The lower reporting limit is necessary in so that the method is sufficiently sensitive; meaning the reporting limit is below the permit limit. These lower detection levels increase the chances for results to be impacted by incidental contamination.

2. Materials Review

USS Fairfield investigated chemicals used on site as possible sources of BEHP. Safety Data Sheets were reviewed for BEHP and any other phthalate components. No USS Fairfield source of BEHP to DSN026 was identified.

- No process chemicals were found to contain BEHP or other phthalates.
- About 20 materials do contain phthalates. These are typically adhesives, coating, or paints that have minimal potential to impact the DSN026 discharge.

3. Sampling Investigations

Two rounds of investigative sampling were performed by USS Fairfield. The first preliminary investigation occurred in May 2015. Under this plan, samples were collected from a variety of internal sample locations using the normal USS sampling technique. Samples were sent to two different analytical labs for analysis. These results were used to help develop the next round of investigative sampling.

The second round also included various internal sample locations and analysis by more than one lab. However, changes were made to the sample collection and preservation methods and

added QC samples (e.g. field duplicates, equipment blanks) were also collected. For contextual information, corresponding grab TSS samples were also collected.

The attached figure shows the detailed water flow diagram for the facility. Using a simplified approach, there are 2 inputs of wastewater to DSN026: DSN013 discharge and FEC Pond discharge. These are commingled prior to the DSN026 monitoring point. The FEC Pond discharge is comprised of stormwater and groundwater while DSN013 discharge is comprised of process wastewater from current operations and some stormwater. Prior to the DSN013 monitoring point, the process wastewater and stormwater are routed through the upper and lower dolomite ponds. These ponds are used for solids settling, aeration, pH monitoring, and (if needed) oil removal. Both rounds of sampling included sampling at some of these locations as part of source investigation efforts.

3.1 First Round of Sampling

In May 2017, the first round of investigatory sampling occurred. Grab samples were collected using either one of two techniques: 1) sample pole with the glass BEHP sample jar attached to the pole, or 2) direct grab/pour into the glass BEHP sample jar.

Samples sent to one lab (ESC) were preserved with sodium thiosulfate and samples sent to the other lab (ALS) did not contain a chemical preservative. Sodium thiosulfate is a common preservative used for EPA Method 625 samples if oxidizing compounds (e.g. chlorine) are expected to be present. It is ESC standard practice to include sodium thiosulfate in bottles used for Method 625 analytes, while ALS standard practice is to not include sodium thiosulfate unless there is a demonstrated need (e.g. measurable residual chlorine).

Table 1 shows the detailed results of the first round of sampling. No USS Fairfield sources of BEHP were indicated by the first round of sampling. With the exception of one sample, all results were non-detect. The one detection was an estimated ("J" flagged result between the method detection limit and reporting limit) result of 0.725 J µg/L for the "pH probe" sample location. The "pH probe" sample location is located in near the pH probe in the 1st (or upper) dolomite pond. If there were a USS Fairfield source of BEHP to the dolomite ponds, one would anticipate detections not only at the "pH probe" (1st pond) but also at the DSN013 equivalent locations that were tested.

Since limited QC samples were collected during the first round, no conclusions as to incidental contamination from either sampling equipment or lab analysis (e.g. sample prep) can be made.

3.2 Second Round of Sampling

Starting in late August 2017 and continuing through early November, the second round of investigatory sampling occurred. As previously indicated, sample collection, preservation, and included QC samples were modified for this round of sampling.

Based on discussions with USS Fairfield personnel, there is no need for the sodium thiosulfate preservative and so for the second investigation, no chemical preservatives were used.

In addition, the following added samples and changes were implemented for the second round of sampling.

- Each event included a trip blank sample. Sample bottles with clean lab water are sent with the sample cooler to the facility. These bottles remain closed and are returned to the lab for analysis.
- Each sample location included equipment blank samples. The collection equipment (pole and empty sample bottle) is first assembled. Then clean lab water is used to rinse the empty sample bottle. The final portion of the rinse water is collected in a separate empty sample bottle and sent for analysis.
- Sample and field duplicate collection. Directly following rinsing of the assembled collection equipment (pole and empty sample bottle), the sample is collected. In this case the empty sample bottle on the pole acts as transfer vessel. The pole bottle is first "rinsed" with an aliquot of DSN026 effluent, emptied and then refilled with DSN026 effluent. The effluent is then poured into a sample bottle for analysis as the "sample". Each sample location included field duplicate samples. Directly following sample collection, the rinsed pole bottle is refilled with DSN026 effluent and poured into a second sample for analysis as the "field duplicate."
- Matrix spike samples were included for some events and sample locations.
- Events were planned in order to capture both "wet" (effluent known to include stormwater) and "dry" (no recent precipitation) conditions.

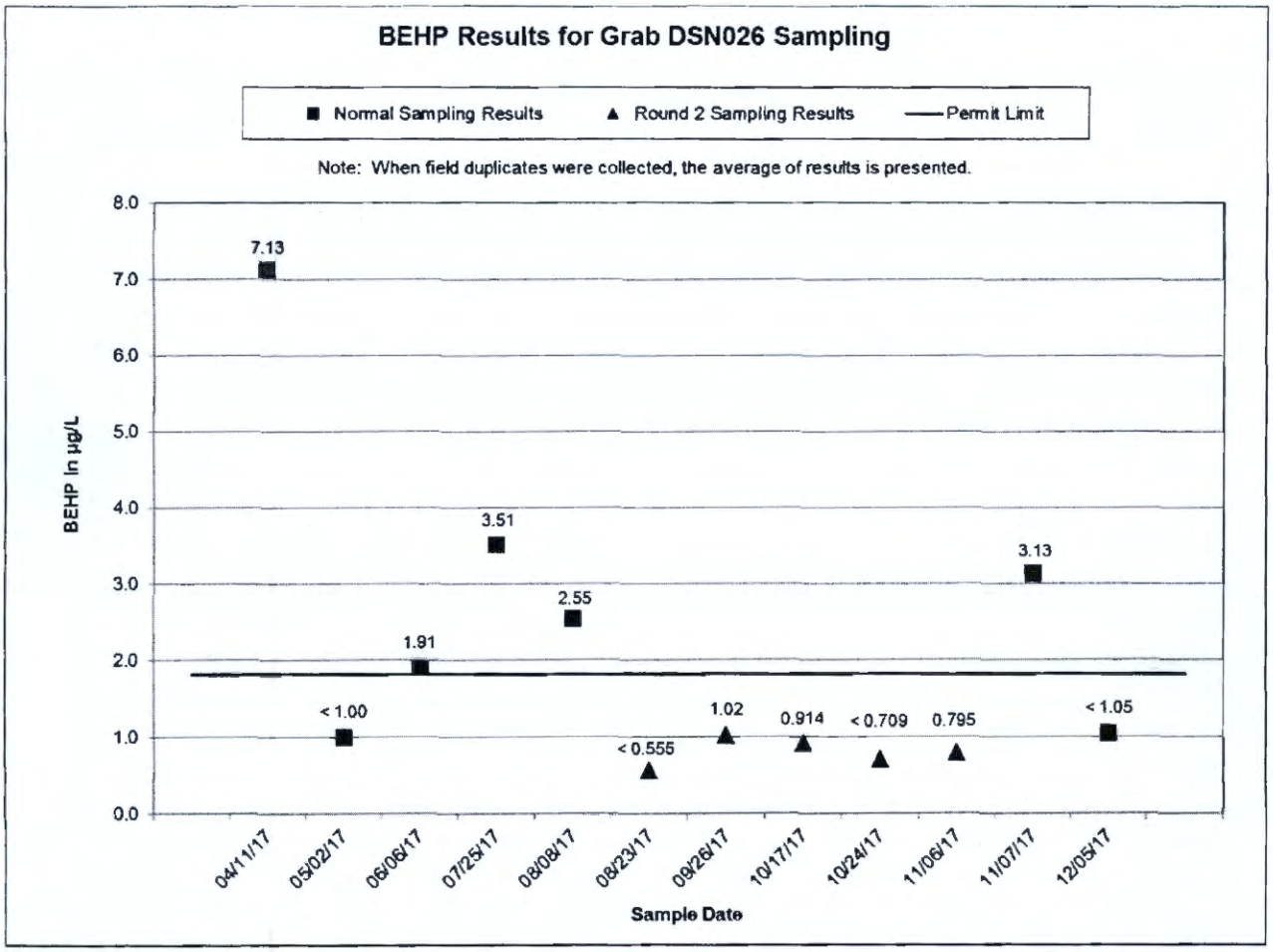
Results of the second round of sampling, grouped by sample location, are detailed in Table 2. Examination of the data for sample and/or field blank detections indicates that these detections are either:

1. Not consistent. Meaning that only one of the sample pair (sample or field duplicate) showed a detection, or
2. Associated with a blank (equipment or method blank) of a similar magnitude.

Other key observations from the round 2 data are:

- No trends for BEHP detections and the presence/absence of stormwater were observed.
- No trends for BEHP detections and TSS concentrations were observed.

Round 2 DSN026 data was also compared to the results of normal grab sampling. Table 3 shows a side by side comparison. For round 2 sampling, the magnitude of detections were all below the permit limit. When comparing on an average basis, round 2 data are also generally lower than normal sample results. This is shown visibly in the following figure.



It is theorized that this could be related to the following two changes enacting during round 2 sampling:

- No use of sodium thiosulfate preservative and
- Rinsing of the sample equipment prior to sample collection.

4. Conclusions and Recommendations

4.1 Conclusions

There is no USS Fairfield source of BEHP to the discharge. Review of safety data sheets shows no production chemicals that contain BEHP or other phthalates. Materials that included

phthalates are typically adhesives, coating, or paints that have minimal potential to impact the DSN026 discharge.

The round 1 and round 2 sampling data support the conclusion that DSN026 detections of BEHP are due to incidental contamination related to sampling equipment or lab analysis (e.g. sample prep). In particular, the round 2 data where added field and lab QC samples/data are available clearly demonstrates the following:

- No consistent (both event to event and for sample/field duplicate pairs) detections of BEHP were observed for either DSN026 or its source waters that are not associated with either equipment or method blank detection of a similar magnitude.

Due to the ubiquitous nature of BEHP and literature documented analytical issues related to incidental contamination, this conclusion is not unexpected.

4.2 Permit Recommendations

USS Fairfield should request removal of the DSN026 associated BEHP limits and monitoring requirements based on the following:

- The original evaluation that determined the need for limits was based on composite sample data which was likely influenced by incidental contamination.
  - The sampling investigations described in Section 3 demonstrate the difficulty in eliminating incidental contamination even for grab samples. The incidental contamination potential for composite samples is even greater given the use of flexible tubing as part of the composite equipment.
- The data used to show the need for limits was influenced by incidental contamination; therefore the need for limits may be overestimated or incorrect.
  - Recent investigations (materials review and sampling) show no USS Fairfield source of BEHP to the DSN026 discharge.

4.3 Sampling Recommendations

Any future monitoring of BEHP should incorporate the following recommendations in order to minimize the possibility of contamination and provide contextual information for interpretation sample results:

1. Eliminate the use of the sodium thiosulfate preservative for BEHP samples. Based on the nature of the DSN026 effluent, it is not necessary. Samples will still meet preservation requirements by continuing to cool the samples (≤ 6°C) without any chemical preservation.
2. Continue collection of field duplicate and equipment blank samples for each event.

TABLE 1. ROUND 1 SAMPLE RESULTS

Notes:
"<" indicates a non-detect result at the listed method detection limit.
"J" indicates estimated results between the method detection limit and reporting limit.
"Q" indicates the associated batch QC was outside the established quality control range for precision. Detailed QA/QC data were not available for review, however listed surrogate recoveries were acceptable.

BEHP (µg/L) Results for Wastewater Samples

Sample Date and Analytical Lab	**Sodium Thiosulfate Preservative?**	**Field Blank**	**pH Probe** - collected near pH probe in 1st (upper) dolomite pond	**Dolomite Up** - collected prior to defoamer addition point for DSN013	**Defoam Water / Defoamer Spray** - collected at defoamer addition point for DSN013	**Dolomite Down** - collected downstream of defoamer addition point for DSN013	**Dolomite** - equivalent to DSN013 but not official sample point	**FEC Pond**
5/01/2017 ESC	Yes		0.725 J, Q					
5/04/2017 ESC	Yes			< 0.709 Q	< 0.709 Q	< 0.709 Q		
5/10/2017 ESC	Yes				< 1.00	< 1.00	< 1.00	
5/11/2017 ALS	No	< 0.40			< 0.40	Broken Bottle	< 0.40	< 0.40
5/16/2017 ALS	No					< 0.40	< 0.40	
5/16/2017 ESC	Yes	< 1.00 Q				< 1.00 Q	< 1.00 Q	

BEHP (µg/L) Results for Water Samples

Sample Date and Analytical Lab	**Sodium Thiosulfate Preservative?**	**Field Blank**	**Industrial Water**	**City Water**	**Bottled Water**
5/10/2017 ESC	Yes		< 1.00	< 1.00	< 1.00
5/11/2017 ALS	No	< 0.40	< 0.40	Broken Bottle	< 0.40
5/16/2017 ALS	No		< 0.40		
5/16/2017 ESC	Yes	< 1.00 Q	< 1.00 Q		

TABLE 2. ROUND 2 SAMPLE RESULTS

Notes:
Bold blue font indicates a detection.
"<" indicates a non-detect result at the listed method detection limit.
"J" indicates estimated results between the method detection limit and reporting limit.
"B" indicates BEHP was also detected in the associated method blank
"Q" indicates that recovery for one of the surrogates was below acceptable limits. Recoveries for the other 2 surrogate were acceptable.

Trip blanks were utlized for each ESC batch of samples. All trip blank results were non-detect (<0.709 ug/L) at the method detection limit.
A field blank (lab water poured from one bottle to another while at the sample location) was also collected for the 8/23/17 event and analyzed by ESC. The result was non-detect (<0.709 ug/L) at the method detection limit.
Matrix spikes were performed using DSN026 samples on 8/23 (ALS), 9/26 (ESC), 10/17 (ESC), and 11/6 (ESC). All recoveries were within the acceptable range.
Unless noted, other reviewed lab QC (lab control spikes and surrogate recoveries) results were within limits for all events.

Sample Date	Lab	Sodium Thiosulfate Preservative?	pH Probe		BEHP (µg/L) Equipment Blank	BEHP (µg/L) Method Blank	Grab TSS (mg/L)	Comments
			BEHP (µg/L) Sample	BEHP (µg/L) Field Duplicate				
09/26/17	ESC	No	< 1.00	< 1.00	< 1.00	< 0.709	5.5	
10/17/17	ESC	No	**2.09**	< 1.00	< 1.00	< 0.709	3.6	Detection questionable since not detected in both the sample and field duplicate.
10/24/17	ESC	No	< 0.709	< 0.709	< 0.709	< 0.709	6.4	
11/06/17	ALS	No	< 0.40	< 0.40	< 0.40	< 0.40	2.7	
11/06/17	ESC	No	**1.05 B**	< 0.709	< 0.709	**0.965 J**	3.4	Sample detection questionable since 1) method blank detection is of similar magnitude as the sample result and 2) not detected in both the sample and field duplicate.

Sample Date	Lab	Sodium Thiosulfate Preservative?	DSN013		BEHP (µg/L) Equipment Blank	BEHP (µg/L) Method Blank	Grab TSS (mg/L)	Comments
			BEHP (µg/L) Sample	BEHP (µg/L) Field Duplicate				
08/23/17	ALS	No	< 0.40	< 0.40	< 0.44	< 0.40	3.3	
08/23/17	ESC	No	< 0.709	< 0.709	**1.10**	< 0.709	2.7	Based on equipment blank detection and non-detects in the sample and duplicate, it appears possible equipment contamination was removed by the equipment blank rinses.
09/26/17	ESC	No	< 0.709	< 0.709	< 1.00	< 0.709	3.0	
10/17/17	ESC	No	< 0.709	< 0.709	< 1.00	< 0.709	2.2	
10/24/17	ESC	No	< 0.709	< 0.709	< 0.709	< 0.709	2.8	
11/06/17	ALS	No	< 0.40	< 0.40	< 0.40	< 0.40	2.3	
11/06/17	ESC	No	**1.11 B**	**1.14 B**	< 0.709	**0.965 J**	2.5	Sample and duplicate detections questionable since the method blank detection is of a similar magnitude as the sample and duplicate.

TABLE 2. ROUND 2 SAMPLE RESULTS

Sample Date	Lab	Sodium Thiosulfate Preservative?	FEC Pond		BEHP (µg/L) Equipment Blank	BEHP (µg/L) Method Blank	Grab TSS (mg/L)	Comments
			BEHP (µg/L) Sample	BEHP (µg/L) Field Duplicate				
08/23/17	ALS	No	< 0.40	< 0.40	< 0.43	< 0.40	7.2	
08/23/17	ESC	No	< 0.709	< 0.709	< 0.709	< 0.709	24.1	
09/26/17	ESC	No	**1.24 B**	**1.14 B**	**0.966 B, J**	**1.08**	9.1	Sample and duplicate detections questionable since the equipment blank and method blank detections are of a similar magnitude as the sample and duplicate.
10/17/17	ESC	No	< 0.709	< 0.709	**1.06 B**	< 0.709 for sample/dup **0.870 J for EQ blank**	14.3	Method blank detection associated with the equipment blank is of similar magnitude as the equipment blank result.
10/24/17	ESC	No	< 0.709	< 0.709	< 0.709	< 0.709	12.3	
11/06/17	ALS	No	< 0.40	**0.61 J**	< 0.40 Q	< 0.40	5.1	Detection questionable since not detected in both the sample and field duplicate.
11/06/17	ESC	No	< 0.709	< 0.709	< 0.709	< 0.709	4.7	

Sample Date	Lab	Sodium Thiosulfate Preservative?	DSN026		BEHP (µg/L) Equipment Blank	BEHP (µg/L) Method Blank	Grab TSS (mg/L)	Comments
			BEHP (µg/L) Sample	BEHP (µg/L) Field Duplicate				
08/23/17	ALS	No	< 0.40	< 0.40	< 0.43	< 0.40	2.9	
08/23/17	ESC	No	< 0.709	< 0.709	< 0.709	< 0.709	2.7	
09/26/17	ESC	No	**1.34 B**	< 0.709	< 0.709	**1.08**	6.0	Sample detection questionable since 1) method blank detection is of similar magnitude as the sample result and 2) not detected in both the sample and field duplicate.
10/17/17	ESC	No	**0.859 B, J**	**0.968 B, J**	**0.838 B, J**	**0.870 J**	3.4	Sample and duplicate detections questionable since the equipment blank and method blank detections are of a similar magnitude as the sample and duplicate.
10/24/17	ESC	No	< 0.709	< 0.709	< 0.709	< 0.709	2.6	
11/06/17	ALS	No	< 0.40	< 0.40	< 0.40	< 0.40	2.3	
11/06/17	ESC	No	**1.02 B**	**1.36 B**	**0.979 B, J**	**0.965 J**	10.9	Sample and duplicate detections questionable since the equipment blank and method blank detections are of a similar magnitude as the sample and duplicate.

TABLE 3. DSN026 RESULTS SINCE SWITCHING TO GRAB SAMPLING

Sample Date	Lab	Sodium Thiosulfate Preservative?	BEHP (µg/L)			Comments
			Sample	Field Duplicate	Average	
04/11/17	ESC	Yes	**7.13 B**		**7.13 B**	Method blank (0.735 µg/L) w/in 1/10 of sample result.
05/02/17	ESC	Yes	< 1.00		< 1.00	No blank information included in lab report.
06/06/17	ESC	Yes	**1.91**		**1.91**	No blank information included in lab report.
07/25/17	ESC	Yes	**3.51**		**3.51**	No blank information included in lab report.
08/08/17	ESC	Yes	**2.55 B**		**2.55 B**	Method blank (1.03 µg/L) w/in 1/5 of sample result.
08/23/17	ALS	No-Part of Round 2	< 0.40	< 0.40	< 0.55	Associated equipment blank and associated method blank non-detect.
	ESC	No-Part of Round 2	< 0.709	< 0.709		Associated equipment blank and associated method blank non-detect.
09/26/17	ESC	No-Part of Round 2	**1.34 B**	< 0.709	**1.02 B**	Method blank for sample (1.08 µg/L) w/in 1/5 of sample result; Method blank for duplicate was non-detect.
10/17/17	ESC	No-Part of Round 2	**0.859 J, B**	**0.968 J, B**	**0.914 J, B**	Method blank (0.870 µg/L) and Equipment blank (0.878 µg/L) same magnitude as sample and duplicate.
10/24/17	ESC	No-Part of Round 2	< 0.709	< 0.709	< 0.709	Associated equipment blank and associated method blank non-detect.
11/06/17	ALS	No-Part of Round 2	< 0.40	< 0.40	**0.80 B**	Associated equipment blank and associated method blank non-detect.
	ESC	No-Part of Round 2	**1.02 B**	**1.36 B**		Method blank (0.965 µg/L) and Equipment blank (0.979 µg/L) same magnitude as sample and duplicate.
11/07/17	ESC	Yes	**3.13**		**3.13**	No blank information included in lab report.
12/05/17	ESC	No	< 1.05		< 1.05	Associated method blank non-detect.

Notes:
Bold red font indicates a detection above the permit limit (1.81 µg/L).
Bold blank font indicates a detection below the permit limit (1.81 µg/L).
"<" indicates a non-detect result at the listed method detection limit.
"J" indicates estimated results between the method detection limit and reporting limit.
"B" indicates BEHP was also detected in the associated method blank

Jackson, Scott A

Subject: RE: Draft Modified NPDES Permit AL0083763 - Additional Review Time Request

From: Brockington, Shawonda (S) <SBrockington@dow.com>
Sent: Friday, January 31, 2020 4:21 PM
To: Jackson, Scott A <scott.jackson@adem.alabama.gov>
Subject: RE: Draft Modified NPDES Permit AL0083763 - Additional Review Time Request

Scott,

A copy of the attached letter has been placed in the mail.

Should there be any questions, please let me know.

Best regards,

Shawonda Brockington
Site EHS&S Leader – DC Alabama, Inc.
A wholly owned subsidiary of The Dow Chemical
1940 Ohio Ferro Rd. • Mt. Meigs, AL 36057
Office: 334.270.3609 | Cell: 504.427.7724
Fax: 334.215.8969 | Email: sbrockington@dow.com

WORLDWIDE PARTNER

January 31, 2020

The Dow Chemical Company
1940 Ohio Ferro Road
Mt. Meigs, AL 36057

Scott Jackson
Alabama Department of Environmental Management
Water Division – Industrial / Municipal Branch
P.O. Box 301463
Montgomery, AL 36130-1463

Subject: DC Alabama, Inc. NPDES Permit AL0083763 – Comments on Draft Permit Modification / Reporting Requirements

Dear Scott;

Part IV C.1.c.(2) of DC Alabama's NPDES permit (AL0083763) specifies that "Biomonitoring test results obtained during each monitoring period shall be summarized and reported using the appropriate Discharge Monitoring Report (DMR) form approved by the Department. In accordance with Section 2. of this part, an effluent toxicity report containing the information in Section 2. shall be included with the DMR. Two copies of the test results must be submitted to the Department no later than 28 days after the month in which the tests were performed."

The last sentence in the paragraph is confusing since the DC Alabama NPDES permit requires that toxicity testing be conducted once per quarter at specified outfalls. The requirement should state that "test results must be submitted to the Department no later than 28 days after the end of the **monitoring period** in which the tests were performed." This change makes the wording in this part of the permit consistent with reporting requirements specified in Part I C.1.b. of the permit.

Part IV C.2. of the NPDES permit specifies the toxicity testing information to be submitted with each discharge monitoring report and states that "The Department may at any time suspend or reinstate this requirement or may increase or decrease the frequency of submittals." This implies that the Department has the discretion to suspend the requirement to submit the information listed in Part IV C.2. of the NPDES permit. If this is the case, DC Alabama requests that ADEM suspend the requirement to submit the toxicity testing information listed in this part of its NPDES permit and in the modified permit currently being considered by ADEM.

Thank you for your consideration of these comments. If you have questions or need additional information, please call me at (334)270-3609.

Sincerely,

Shawonda Brockington

Shawonda Brockington
Site EHS&S Site Leader
DC Alabama, Inc.

Jackson, Scott A

Subject: RE: DC Alabama - NPDES Permit Modification

From: Sisk, Lynn/MGM <Lynn.Sisk@jacobs.com>
Sent: Tuesday, July 14, 2020 1:13 PM
To: Ramsey, S Scott <SRamsey@adem.alabama.gov>
Cc: Powers, Martin/SEA <Martin.Powers@jacobs.com>; Cesarz, Scott/DET <Scott.Cesarz@jacobs.com>; Gale, Matthew/CIN <Matthew.Gale@jacobs.com>; Martin, J.P./MGM <J.P.Martin@jacobs.com>
Subject: DC Alabama - NPDES Permit Modification

Scott,

I hope that you and your family are doing well. I am following up on our previous conversation (pre-pandemic) regarding the discharge of uncontaminated groundwater from DC Alabama's new process stormwater retention basin underdrain system. To refresh your memory and provide some background for the following discussion, I will summarize the permit modification process to date.

- DC Alabama submitted a request for a modification of its individual NPDES permit (AL0083763) in May 2019 to include the discharge of treated process stormwater at Outfall 004 to the Tallapoosa River.
- ADEM reviewed the modification request and prepared a DRAFT Modified Permit in July 2019 for DC Alabama's review.
- Following DC Alabama's review of the draft modified NPDES permit and additional review of available water quality data, ADEM prepared a revised draft modified NPDES permit in December 2019 to add monitoring requirements for Bis (2-Ethylhexyl) Phthalate. By this time, construction of the new stormwater retention basin was well underway.
- Following the completion of DC Alabama's review of the revised draft modified NPDES permit in January 2020 but prior to issuance of a Final Modified NDPES permit by ADEM, it became evident that an underdrain system would be needed for the new stormwater basin to prevent shallow groundwater from damaging the concrete floor of the basin.
- On February 14, 2020, I contacted you to discuss possible options for managing the water from the underdrain and to determine if the discharge of this water to the stormwater drainage channel adjacent to the stormwater retention basin would need coverage in the NPDES permit. You stated that ADEM would need to review the results of a laboratory sampling analysis to determine if the water from the underdrain system was "uncontaminated" before a determination of how, or if, the discharge of the underdrain water should be addressed in the NPDES permit.
- Issuance of a Final Modified NPDES permit for the DC Alabama facility was put on hold until a sample of the underdrain water could be analyzed and the results reviewed by the Water Division of ADEM.

The attached spreadsheet contains the results of the laboratory analyses conducted on a sample collected from the underdrain system on February 27, 2020. The results confirm that the shallow groundwater collected by the underdrain system can be considered "uncontaminated" groundwater. The discharge of this water will be intermittent and based on shallow groundwater levels which fluctuate in response to rainfall. The rate of discharge during discharge events is estimated to be approximately 20 gallons per minute (28,800 gallons per day).

Let me know if you have questions about the data or need additional information. I am available to discuss the sample results and the next step in issuance of the Final Modified NPDES permit for the DC Alabama facility at your convenience.

Lynn Sisk, P.E.
Jacobs
Technologist | BIAF
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Lynn.Sisk@jacobs.com

www.jacobs.com

SW-13_20200227_N_WS 2/27/2020

Analysis	ANALYTIC_METHOD	Fraction	Analyte	Unit	Result	RDL	MDL	QL
METAL	SW6010C	D	ALUMINUM	mg/l	0.5 U	0.50	0.093	0.500
METAL	SW6010C	D	ANTIMONY	mg/l	0.05 U	0.05	0.004	0.050
METAL	SW6010C	D	ARSENIC	mg/l	0.01 U	0.01	0.003	0.010
METAL	SW6010C	D	BARIUM	mg/l	0.12	0.02	0.001	0.020
METAL	SW6010C	D	BERYLLIUM	mg/l	0.005 U	0.01	0.000	0.005
METAL	SW6010C	D	BORON	mg/l	0.025 J	0.20	0.012	0.200
METAL	SW6010C	D	CADMIUM	mg/l	0.0004 J	0.01	0.000	0.005
METAL	SW6010C	D	CALCIUM	mg/l	26	1.00	0.024	1.000
METAL	SW6010C	D	CHROMIUM	mg/l	0.01 U	0.01	0.002	0.010
METAL	SW6010C	D	COBALT	mg/l	0.0086 J	0.01	0.000	0.010
METAL	SW6010C	D	COPPER	mg/l	0.01 U	0.01	0.008	0.010
METAL	SW6010C	D	IRON	mg/l	0.4 U	0.40	0.027	0.400
METAL	SW6010C	D	LEAD	mg/l	0.01 U	0.01	0.002	0.010
METAL	SW6010C	D	MAGNESIUM	mg/l	7.2	1.00	0.056	1.000
METAL	SW6010C	D	MANGANESE	mg/l	5.9 B	0.01	0.000	0.010
METAL	SW7470A	D	MERCURY	ug/l	0.25 U	0.25	0.100	0.250
METAL	SW6010C	D	MOLYBDENUM	mg/l	0.0038 J	0.01	0.001	0.010
METAL	SW6010C	D	NICKEL	mg/l	0.01 U	0.01	0.001	0.010
METAL	SW6010C	D	POTASSIUM	mg/l	3.6	1.00	0.037	1.000
METAL	SW6010C	D	SELENIUM	mg/l	0.04 U	0.04	0.003	0.040
METAL	SW6010C	D	Silica as SiO2	mg/l	13	0.43	0.005	0.430
METAL	SW6010C	D	SILVER	mg/l	0.0014 JB	0.01	0.001	0.010
METAL	SW6010C	D	Sodium	mg/l	29 B	1.00	0.021	1.000
METAL	SW6010C	D	THALLIUM	mg/l	0.015 J^B	0.03	0.004	0.030
METAL	SW6010C	D	VANADIUM	mg/l	0.01 U	0.01	0.000	0.010
METAL	SW6010C	D	ZINC	mg/l	0.03 U	0.03	0.004	0.030
METAL	SW6010C	T	ALUMINUM	mg/l	0.5 U	0.50	0.093	0.500
METAL	SW6010C	T	ANTIMONY	mg/l	0.05 U	0.05	0.004	0.050
METAL	SW6010C	T	ARSENIC	mg/l	0.01 U	0.01	0.003	0.010
METAL	SW6010C	T	BARIUM	mg/l	0.13	0.02	0.001	0.020
METAL	SW6010C	T	BERYLLIUM	mg/l	0.005 U	0.01	0.000	0.005
METAL	SW6010C	T	BORON	mg/l	0.026 J	0.20	0.012	0.200
METAL	SW6010C	T	CADMIUM	mg/l	0.0004 J	0.01	0.000	0.005
METAL	SW6010C	T	CALCIUM	mg/l	26	1.00	0.024	1.000
METAL	SW6010C	T	CHROMIUM	mg/l	0.01 U	0.01	0.002	0.010
METAL	SW6010C	T	COBALT	mg/l	0.0085 J	0.01	0.000	0.010
METAL	SW6010C	T	COPPER	mg/l	0.01 U	0.01	0.008	0.010
METAL	SW6010C	T	IRON	mg/l	4.7	0.40	0.027	0.400
METAL	SW6010C	T	LEAD	mg/l	0.01 U	0.01	0.002	0.010
METAL	SW6010C	T	MAGNESIUM	mg/l	7.2	1.00	0.056	1.000
METAL	SW6010C	T	MANGANESE	mg/l	6	0.01	0.000	0.010
METAL	SW6010C	T	MOLYBDENUM	mg/l	0.0036 J	0.01	0.001	0.010
METAL	SW6010C	T	NICKEL	mg/l	0.01 U	0.01	0.001	0.010
METAL	SW6010C	T	POTASSIUM	mg/l	3.7	1.00	0.037	1.000
METAL	SW6010C	T	SELENIUM	mg/l	0.04 U	0.04	0.003	0.040
METAL	SW6010C	T	Silica as SiO2	mg/l	14	0.43	0.005	0.430
METAL	SW6010C	T	SILVER	mg/l	0.0021 J	0.01	0.001	0.010
METAL	SW6010C	T	Sodium	mg/l	29 B	1.00	0.021	1.000
METAL	SW6010C	T	THALLIUM	mg/l	0.016 J^	0.03	0.004	0.030
METAL	SW6010C	T	VANADIUM	mg/l	0.01 U	0.01	0.000	0.010
METAL	SW6010C	T	ZINC	mg/l	0.03 U	0.03	0.004	0.030
METAL	SW7470A	T	MERCURY	ug/l	0.25 U	0.25	0.100	0.250
PCB	SW8082	T	Aroclor 1016	ug/l	1 U*	1.00	0.540	1.000
PCB	SW8082	T	Aroclor 1221	ug/l	1 U*	1.00	0.440	1.000
PCB	SW8082	T	Aroclor 1232	ug/l	1 U*	1.00	0.120	1.000
PCB	SW8082	T	Aroclor 1242	ug/l	1 U*	1.00	0.160	1.000
PCB	SW8082	T	Aroclor 1248	ug/l	1 U*	1.00	0.200	1.000
PCB	SW8082	T	Aroclor 1254	ug/l	1 U*	1.00	0.140	1.000
PCB	SW8082	T	Aroclor 1260	ug/l	1 U*	1.00	0.340	1.000
SVOC	SW8260C	T	ISOPROPYLBENZENE (CUMENE)	ug/l	1 U	1.00	0.240	1.000
SVOC	SW8270D	T	2,4,5-TRICHLOROPHENOL	ug/l	2.2 U	2.20	0.320	2.200
SVOC	SW8270D	T	2,4,6-TRICHLOROPHENOL	ug/l	2.2 U	2.20	0.360	2.200
SVOC	SW8270D	T	2,4-DICHLOROPHENOL	ug/l	2.7 U	2.70	0.280	2.700
SVOC	SW8270D	T	2,4-DIMETHYLPHENOL	ug/l	2.7 U	2.70	0.200	2.700

SVOC	SW8270D	T	2,4-DINITROPHENOL	ug/l	5.4 U	5.40	0.430	5.400
SVOC	SW8270D	T	2,4-DINITROTOLUENE	ug/l	1.6 U	1.60	0.350	1.600
SVOC	SW8270D	T	2,6-DINITROTOLUENE	ug/l	1.1 U	1.10	0.320	1.100
SVOC	SW8270D	T	2-CHLORONAPHTHALENE	ug/l	1.6 U	1.60	0.210	1.600
SVOC	SW8270D	T	2-CHLOROPHENOL	ug/l	2.2 U	2.20	0.240	2.200
SVOC	SW8270D	T	2-METHYLPHENOL (O-CRESOL)	ug/l	1.6 U	1.60	0.210	1.600
SVOC	SW8270D	T	2-NITROANILINE	ug/l	2.7 U	2.70	0.380	2.700
SVOC	SW8270D	T	2-NITROPHENOL	ug/l	1.1 U	1.10	0.240	1.100
SVOC	SW8270D	T	3,3'-DICHLOROBENZIDINE	ug/l	5.4 U	5.40	0.350	5.400
SVOC	SW8270D	T	3-Methylphenol & 4-Methylphenol	ug/l	1.1 U	1.10	0.170	1.100
SVOC	SW8270D	T	3-NITROANILINE	ug/l	2.7 U	2.70	0.140	2.700
SVOC	SW8270D	T	4,6-DINITRO-2-METHYLPHENOL	ug/l	2.2 U	2.20	0.170	2.200
SVOC	SW8270D	T	4-BROMOPHENYL PHENYL ETHER	ug/l	1.6 U	1.60	0.270	1.600
SVOC	SW8270D	T	4-CHLORO-3-METHYLPHENOL	ug/l	1.1 U	1.10	0.270	1.100
SVOC	SW8270D	T	4-CHLOROANILINE	ug/l	1.1 U	1.10	0.120	1.100
SVOC	SW8270D	T	4-CHLOROPHENYL PHENYL ETHER	ug/l	1.6 U	1.60	0.250	1.600
SVOC	SW8270D	T	4-NITROANILINE	ug/l	2.7 U	2.70	0.250	2.700
SVOC	SW8270D	T	4-NITROPHENOL	ug/l	2.7 U	2.70	0.360	2.700
SVOC	SW8270D	T	ACETOPHENONE	ug/l	1.6 U	1.60	0.740	1.600
SVOC	SW8270D	T	ATRAZINE	ug/l	5.4 U*	5.40	1.200	5.400
SVOC	SW8270D	T	Benzaldehyde	ug/l	5.4 U*	5.40	1.300	5.400
SVOC	SW8270D	T	BENZYL BUTYL PHTHALATE	ug/l	2.7 U*	2.70	0.920	2.700
SVOC	SW8270D	T	BIPHENYL (DIPHENYL)	ug/l	1.6 U	1.60	0.790	1.600
SVOC	SW8270D	T	BIS(2-CHLOROETHOXY) METHANE	ug/l	1.6 U	1.60	0.210	1.600
SVOC	SW8270D	T	BIS(2-CHLOROETHYL) ETHER	ug/l	1.6 U	1.60	0.200	1.600
SVOC	SW8270D	T	BIS(2-CHLOROISOPROPYL) ETHER	ug/l	1.1 U	1.10	0.200	1.100
SVOC	SW8270D	T	BIS(2-ETHYLHEXYL) PHTHALATE	ug/l	2.7 U*	2.70	0.640	2.700
SVOC	SW8270D	T	Caprolactam	ug/l	1.1 U	1.10	0.430	1.100
SVOC	SW8270D	T	CARBAZOLE	ug/l	5.4 U	5.40	0.380	5.400
SVOC	SW8270D	T	DIBENZOFURAN	ug/l	1.6 U	1.60	0.170	1.600
SVOC	SW8270D	T	DIETHYL PHTHALATE	ug/l	5.4 U	5.40	4.600	5.400
SVOC	SW8270D	T	DIMETHYL PHTHALATE	ug/l	2.7 U	2.70	0.200	2.700
SVOC	SW8270D	T	DI-N-BUTYL PHTHALATE	ug/l	19 *	5.40	2.000	5.400
SVOC	SW8270D	T	DI-N-OCTYLPHTHALATE	ug/l	5.4 U*	5.40	0.170	5.400
SVOC	SW8270D	T	HEXACHLOROBENZENE	ug/l	1.6 U	1.60	0.270	1.600
SVOC	SW8270D	T	HEXACHLOROBUTADIENE	ug/l	2.2 U	2.20	0.210	2.200
SVOC	SW8270D	T	HEXACHLOROCYCLOPENTADIENE	ug/l	1.6 U	1.60	0.160	1.600
SVOC	SW8270D	T	HEXACHLOROETHANE	ug/l	2.2 U	2.20	0.180	2.200
SVOC	SW8270D	T	ISOPHORONE	ug/l	1.6 U	1.60	0.160	1.600
SVOC	SW8270D	T	NITROBENZENE	ug/l	1.6 U	1.60	0.220	1.600
SVOC	SW8270D	T	N-NITROSODI-N-PROPYLAMINE	ug/l	2.7 U	2.70	0.260	2.700
SVOC	SW8270D	T	N-NITROSODIPHENYLAMINE	ug/l	1.6 U	1.60	0.360	1.600
SVOC	SW8270D	T	PENTACHLOROPHENOL	ug/l	2.7 U	2.70	1.000	2.700
SVOC	SW8270D	T	PHENOL	ug/l	1.6 U	1.60	0.150	1.600
SVOC	SW8270DSIM	T	2-METHYLNAPHTHALENE	ug/l	0.073	0.05	0.016	0.050
SVOC	SW8270DSIM	T	ACENAPHTHENE	ug/l	0.05 U	0.05	0.019	0.050
SVOC	SW8270DSIM	T	ACENAPHTHYLENE	ug/l	0.05 U	0.05	0.015	0.050
SVOC	SW8270DSIM	T	ANTHRACENE	ug/l	0.05 U	0.05	0.013	0.050
SVOC	SW8270DSIM	T	BENZO(A)ANTHRACENE	ug/l	0.05 UF2	0.05	0.011	0.050
SVOC	SW8270DSIM	T	BENZO(A)PYRENE	ug/l	0.05 U	0.05	0.004	0.050
SVOC	SW8270DSIM	T	BENZO(B)FLUORANTHENE	ug/l	0.05 UF2	0.05	0.004	0.050
SVOC	SW8270DSIM	T	BENZO(G,H,I)PERYLENE	ug/l	0.05 U	0.05	0.007	0.050
SVOC	SW8270DSIM	T	BENZO(K)FLUORANTHENE	ug/l	0.05 U	0.05	0.008	0.050
SVOC	SW8270DSIM	T	CHRYSENE	ug/l	0.05 UF2	0.05	0.010	0.050
SVOC	SW8270DSIM	T	DIBENZ(A,H)ANTHRACENE	ug/l	0.05 U	0.05	0.004	0.050
SVOC	SW8270DSIM	T	FLUORANTHENE	ug/l	0.05 U	0.05	0.013	0.050
SVOC	SW8270DSIM	T	FLUORENE	ug/l	0.05 U	0.05	0.013	0.050
SVOC	SW8270DSIM	T	INDENO(1,2,3-C,D)PYRENE	ug/l	0.05 U	0.05	0.014	0.050
SVOC	SW8270DSIM	T	NAPHTHALENE	ug/l	0.039 JB	0.05	0.018	0.050
SVOC	SW8270DSIM	T	PHENANTHRENE	ug/l	0.013 J	0.05	0.012	0.050
SVOC	SW8270DSIM	T	PYRENE	ug/l	0.017 JF2F	0.05	0.012	0.050
VOC	SW8260C	T	1,1,1-TRICHLOROETHANE	ug/l	1 U	1.00	0.210	1.000
VOC	SW8260C	T	1,1,2,2-TETRACHLOROETHANE	ug/l	1 U	1.00	0.200	1.000
VOC	SW8260C	T	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE	ug/l	1 U	1.00	0.210	1.000
VOC	SW8260C	T	1,1,2-TRICHLOROETHANE	ug/l	1 U	1.00	0.210	1.000
VOC	SW8260C	T	1,1-DICHLOROETHANE	ug/l	1 U	1.00	0.170	1.000

VOC	SW8260C	T	1,1-DICHLOROETHENE	ug/l	1 U	1.00	0.190	1.000
VOC	SW8260C	T	1,2,3-Trichlorobenzene	ug/l	1 U	1.00	0.570	1.000
VOC	SW8260C	T	1,2,4-TRICHLOROBENZENE	ug/l	1 U	1.00	0.180	1.000
VOC	SW8260C	T	1,2-DIBROMO-3-CHLOROPROPANE	ug/l	1 U	1.00	0.810	1.000
VOC	SW8260C	T	1,2-DIBROMOETHANE (ETHYLENE DIBROMIDE)	ug/l	1 U	1.00	0.110	1.000
VOC	SW8260C	T	1,2-DICHLOROBENZENE	ug/l	1 U	1.00	0.150	1.000
VOC	SW8260C	T	1,2-DICHLOROETHANE	ug/l	1 U	1.00	0.120	1.000
VOC	SW8260C	T	1,2-DICHLOROPROPANE	ug/l	1 U	1.00	0.140	1.000
VOC	SW8260C	T	1,3-DICHLOROBENZENE	ug/l	1 U	1.00	0.210	1.000
VOC	SW8260C	T	1,4-DICHLOROBENZENE	ug/l	1 U	1.00	0.180	1.000
VOC	SW8260C	T	2-HEXANONE	ug/l	2 UF1	2.00	0.270	2.000
VOC	SW8260C	T	ACETONE	ug/l	5 U	5.00	0.450	5.000
VOC	SW8260C	T	BENZENE	ug/l	1 U	1.00	0.180	1.000
VOC	SW8260C	T	BROMODICHLOROMETHANE	ug/l	1 U	1.00	0.150	1.000
VOC	SW8260C	T	BROMOFORM	ug/l	1 U	1.00	0.150	1.000
VOC	SW8260C	T	BROMOMETHANE	ug/l	2 U	2.00	0.250	2.000
VOC	SW8260C	T	CARBON DISULFIDE	ug/l	2 U	2.00	0.220	2.000
VOC	SW8260C	T	CARBON TETRACHLORIDE	ug/l	1 U	1.00	0.180	1.000
VOC	SW8260C	T	CHLOROBENZENE	ug/l	1 U	1.00	0.190	1.000
VOC	SW8260C	T	Chlorobromomethane	ug/l	1 U	1.00	0.160	1.000
VOC	SW8260C	T	CHLOROETHANE	ug/l	2 U*	2.00	0.240	2.000
VOC	SW8260C	T	CHLOROFORM	ug/l	1 U	1.00	0.150	1.000
VOC	SW8260C	T	CHLOROMETHANE	ug/l	2 U*	2.00	0.210	2.000
VOC	SW8260C	T	CIS-1,2-DICHLOROETHYLENE	ug/l	1 U	1.00	0.160	1.000
VOC	SW8260C	T	CIS-1,3-DICHLOROPROPENE	ug/l	1 U	1.00	0.160	1.000
VOC	SW8260C	T	CYCLOHEXANE	ug/l	1 U	1.00	0.220	1.000
VOC	SW8260C	T	DIBROMOCHLOROMETHANE	ug/l	1 U	1.00	0.120	1.000
VOC	SW8260C	T	DICHLORODIFLUOROMETHANE	ug/l	1 U*	1.00	0.860	1.000
VOC	SW8260C	T	ETHYLBENZENE	ug/l	1 U	1.00	0.210	1.000
VOC	SW8260C	T	METHYL ACETATE	ug/l	5 U	5.00	0.550	5.000
VOC	SW8260C	T	METHYL ETHYL KETONE (2-BUTANONE)	ug/l	2 U	2.00	0.760	2.000
VOC	SW8260C	T	METHYL ISOBUTYL KETONE (4-METHYL-2-PENTANONE)	ug/l	2 U	2.00	0.350	2.000
VOC	SW8260C	T	METHYLCYCLOHEXANE	ug/l	1 U	1.00	0.210	1.000
VOC	SW8260C	T	METHYLENE CHLORIDE	ug/l	5 U	5.00	0.180	5.000
VOC	SW8260C	T	STYRENE	ug/l	1 U	1.00	0.180	1.000
VOC	SW8260C	T	TERT-BUTYL METHYL ETHER	ug/l	1 U	1.00	0.110	1.000
VOC	SW8260C	T	TETRACHLOROETHYLENE(PCE)	ug/l	1 U	1.00	0.330	1.000
VOC	SW8260C	T	TOLUENE	ug/l	1 U	1.00	0.200	1.000
VOC	SW8260C	T	TRANS-1,2-DICHLOROETHENE	ug/l	1 U	1.00	0.190	1.000
VOC	SW8260C	T	TRANS-1,3-DICHLOROPROPENE	ug/l	1 U	1.00	0.140	1.000
VOC	SW8260C	T	TRICHLOROETHYLENE (TCE)	ug/l	1 U	1.00	0.140	1.000
VOC	SW8260C	T	TRICHLOROFLUOROMETHANE	ug/l	1 U	1.00	0.240	1.000
VOC	SW8260C	T	VINYL CHLORIDE	ug/l	2 U	2.00	0.250	2.000
VOC	SW8260C	T	XYLENES, TOTAL	ug/l	2 U	2.00	0.370	2.000
VOC	SW8270DSIM	T	1-METHYLNAPHTHALENE	ug/l	0.041 JF1	0.05	0.016	0.050

Notes:
µg/L = micrograms per liter
mg/L - milligrams per liter
^ = Instrument related QC is outside acceptance limits
* (SVOC) = LCS or LCSD is outside acceptance limits
* (VOC) = Relative Percent Difference (RPD) of the lab control sample and lab control sample duplicate exceeds the control limits
B= Compound was found in the blank and sample
F1 = Matrix spike (MS) and /or matrix spike duplicate (MSD) Recovery is outside acceptance limits
F2 = MS/MSD RPD exceeds control limits due to sample size difference
J = the reported concentration is estimated
MDL = Method Detection Limit
N = normal field sample
PCB = polychlorinated biphenyl
QL = Quantification Limit
RDL = Reporting Detection Limit
SVOC = semivolatile organic compound
U = not detected at reported concentration
VOC = volatile organic compound

Jackson, Scott A

From: Sisk, Lynn/MGM <Lynn.Sisk@jacobs.com>
Sent: Friday, August 28, 2020 11:35 AM
To: Jackson, Scott A
Cc: Powers, Martin/SEA; Mehigh, Kurt/DET; Cesarz, Scott/DET; Martin, J.P./MGM; Brockington, Shawonda (S)
Subject: Updated NPDES forms for DC Alabama NPDES permit modification request

Follow Up Flag: Follow up
Flag Status: Flagged

Scott,

As you probably recall, DC Alabama, Inc. in Mt. Meigs has been preparing a NPDES permit modification request for several months and has completed revisions to EPA Form 1 and ADEM Form 187. The revisions include the following changes:

- The addition of stormwater to Outfall 004
- The addition of uncontaminated groundwater to Outfall 001
- A new process flow diagram to reflect the changes listed above
- Addition of the new DC Alabama Site Leader, Meredith Bruick
- New corporate officers

I will drop the signed forms off at the front desk at ADEM's main office on Coliseum Blvd. this afternoon.

Thanks. Let me know if you have questions as you review the information. Have a good weekend.

Lynn Sisk, P.E.
Jacobs
Technologist | BIAF
334.215.9060
334.467.6284 mobile
334.273.7504 fax
Lynn.Sisk@jacobs.com

www.jacobs.com

CH2M HILL
4121 Carmichael Rd.
Suite 400
Montgomery, AL 36106

CH2MHILL.

Scott Jackson
Water Division
Industrial Permitting

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (ADEM)
NPDES INDIVIDUAL PERMIT APPLICATION
SUPPLEMENTARY INFORMATION FOR INDUSTRIAL FACILITIES

Instructions: This form should be used to submit the required supplementary information for an application for an NPDES individual permit for industrial facilities. The completed application should be submitted to ADEM in duplicate. If insufficient space is available to address any item, please continue on an attached sheet of paper. Please mark "N/A" in the appropriate box when an item is not applicable to the applicant. **Please type or print legibly in blue or black ink.** Mail the completed application to:

ADEM-Water Division
Industrial Section
P O Box 301463
Montgomery, AL 36130-1463

RECEIVED
AUG 28 2020
IND / MUN BRANCH

PURPOSE OF THIS APPLICATION

- ☐ Initial Permit Application for New Facility*
- ☐ Initial Permit Application for Existing Facility*
- ■ Modification of Existing Permit
- ☐ Reissuance of Existing Permit
- ☐ Revocation & Reissuance of Existing Permit

* *An application for participation in the ADEM's Electronic Environmental (E2) Reporting must be submitted to allow permittee to electronically submit reports as required.*

SECTION A – GENERAL INFORMATION

1. Facility Name: DC Alabama, Inc.
2. NPDES Permit Number: AL 0083763 (not applicable if initial permit application)
3. SID Permit Number (if applicable): IU
4. NPDES General Permit Number (if applicable): ALG
5. Facility Location (Front Gate): Latitude: 32.395942 Longitude: -86.072600
7. Responsible Official (as described on the last page of this application):

   Name: Meredith Bruick Title: Site Leader

   Address: 1940 Ohio Ferro Road

   City: Mount Meigs State: Alabama Zip: 36057

   Phone Number: 334-270-3737 Email Address: MRBruick@dow.com
8. Designated Discharge Monitoring Report (DMR) Contact:

   Name: Shawonda Brockington Title: Site EHS Delivery Leader

   Phone Number: 334-270-3609 Email Address: SBrockington@dow.com
9. Type of Business Entity:

   ☒ Corporation ☐ General Partnership ☐ Limited Partnership ☐ Limited Liability Company ☐ Sole Proprietorship

   ☐ Other (Please Specify)
10. Complete this section if the Applicant's business entity is a Corporation

    a) Location of Incorporation:

    Address: 1940 Ohio Ferro Road

    City: Mount Meigs County: Montgomery State: Alabama Zip: 36057

    b) Parent Corporation of Applicant:

    Name: The Dow Chemical Corporation

    Address: 2040 Dow Center

    City: Midland State: Michigan Zip: 48647

c) Subsidiary Corporation(s) of Applicant:

Name: Not Applicable

Address:

City: State: Zip:

d) Corporate Officers:

Name: Scott Niswonger, President

Address: P.O. Box 68

City: Mount Meigs State: Alabama Zip: 36057

Name: John Tierney, Secretary

Address: P.O. Box 68

City: Mount Meigs State: Alabama Zip: 36057

e) Agent designated by the corporation for purposes of service:

Name: Meredith Bruick

Address: P.O. Box 68

City: Mount Meigs State: Alabama Zip: 36057

11. If the Applicant's business entity is a Partnership, please list the general partners.

Name: Not Applicable Name:

Address: Address:

City: State: Zip: City: State: Zip:

12. If the Applicant's business entity is a Proprietorship, please enter the proprietor's information.

Name: Not Applicable

Address:

City: State: Zip:

15. Identify all Administrative Complaints, Notices of Violation, Directives, Administrative Orders, or Litigation concerning water pollution, if any, against the Applicant, its parent corporation or subsidiary corporations within the State of Alabama within the past five years (attach additional sheets if necessary):

Facility Name	Permit Number	Type of Action	Date of Action
DC Alabama, Inc.	ALG120051	Consent Order	10/30/2018
DC Alabama, Inc.	ALG120051	Notice of Violation	3/12/2018

SECTION B – BUSINESS ACTIVITY

If your facility conducts or will be conducting any of the processes listed below (regardless of whether they generate wastewater, waste sludge, or hazardous waste), place a check beside the category of business activity (check all that apply):

Industrial Categories

- ☐ Aluminum Forming
- ☐ Asbestos Manufacturing
- ☐ Battery Manufacturing
- ☐ Can Making
- ☐ Canned and Preserved Fruit and Vegetables
- ☐ Canned and Preserved Seafood
- ☐ Cement Manufacturing
- ☐ Centralized Waste Treatment
- ☐ Carbon Black
- ☐ Coal Mining
- ☐ Coil Coating
- ☐ Copper Forming
- ☐ Electric and Electronic Components Manufacturing
- ☐ Electroplating
- ☐ Explosives Manufacturing
- ☐ Feedlots
- ☐ Ferroalloy Manufacturing
- ☐ Fertilizer Manufacturing
- ☐ Foundries (Metal Molding and Casting)
- ☐ Glass Manufacturing
- ☐ Grain Mills
- ☐ Gum and Wood Chemicals Manufacturing
- ☐ Inorganic Chemicals
- ☐ Iron and Steel
- ☐ Leather Tanning and Finishing
- ☐ Metal Finishing
- ☐ Meat Products
- ☐ Metal Molding and Casting
- ☐ Metal Products
- ☐ Nonferrous Metals Forming
- ☐ Nonferrous Metals Manufacturing
- ☐ Oil and Gas Extraction
- ☐ Organic Chemicals Manufacturing
- ☐ Paint and Ink Formulating
- ☐ Paving and Roofing Manufacturing
- ☐ Pesticides Manufacturing
- ☐ Petroleum Refining
- ☐ Phosphate Manufacturing
- ☐ Photographic
- ☐ Pharmaceutical
- ☐ Plastic & Synthetic Materials
- ☐ Plastics Processing Manufacturing
- ☐ Porcelain Enamel
- ☐ Pulp, Paper, and Fiberboard Manufacturing
- ☐ Rubber
- ☐ Soap and Detergent Manufacturing
- ☐ Steam and Electric
- ☐ Sugar Processing
- ☐ Textile Mills
- ☐ Timber Products
- ☐ Transportation Equipment Cleaning
- ☐ Waste Combustion
- ☒ Other (specify) SIC 3313, Electrometallurical, except steel

A facility with processes inclusive in these business areas may be covered by Environmental Protection (EPA) categorical standards. These facilities are termed "categorical users".

SECTION C – WASTEWATER DISCHARGE INFORMATION

1. Do you share an outfall with another facility? ☒ Yes ☐ No (If no, continue to C.2)

For each shared outfall, provide the following:

Applicant's Outfall No.	Name of Other Permittee/Facility	NPDES Permit No.	Where is sample collected by Applicant?
DSN004	Montgomery Water Works and Sanitary Sewer Board - Milley's Creek WPCP	AL0082431	After final treatment

2. Do you have, or plan to have, automatic sampling equipment or continuous wastewater flow metering equipment at this facility?

Current:	Flow Metering	☒ Yes	☐ No	☐ N/A
	Sampling Equipment	☒ Yes	☐ No	☐ N/A
Planned:	Flow Metering	☐ Yes	☐ No	☒ N/A
	Sampling Equipment	☐ Yes	☐ No	☒ N/A

If so, please attach a schematic diagram of the sewer system indicating the present or future location of this equipment and describe the equipment below:

Flow rate through the treatment system is logged using a flow totalizer. A 24-hour composite sampler is installed after final treatment and prior to discharge. See the attached flow diagram.

3. Are any process changes or expansions planned during the next three years that could alter wastewater volumes or characteristics?

☒ Yes ☐ No (If no, continue to C.4)

Briefly describe these changes and their anticipated effects on the wastewater volume and characteristics:

After the slurry pond is dewatered and closed in place, the process wastewater discharge will cease. The only discharges from the facility at that time will be stormwater and non-contact cooling water.

4. List the trade name and chemical composition of all biocides and corrosion inhibitors used:

Trade Name	Chemical Composition
Acutrace 3014	See attached biocide sheet. (Applicable to DSN003 only)
Acubrome Liquid	See attached biocide sheet. (Applicable to DSN003 only)
Sodium Hypochlorite	See attached biocide sheet. (Applicable to DSN003 only)

For each biocide and/or corrosion inhibitor used, please include the following information:

(1) 96-hour median tolerance limit data for organisms representative of the biota of the waterway into which the discharge will ultimately reach,
(2) quantities to be used,
(3) frequencies of use,
(4) proposed discharge concentrations, and
(5) EPA registration number, if applicable

SECTION D – WATER SUPPLY

Water Sources (check as many as are applicable):

- ■ Private Well
- ■ Municipal Water Utility (Specify City):
- ☐ Surface Water
- ☐ Other (Specify): _____

IF MORE THAN ONE WELL OR SURFACE INTAKE, PROVIDE DATA FOR EACH ON AN ATTACHMENT

City: 0.002 MGD* Well: 0.72 MGD* Well Depth: 533 Ft. Latitude: 32.39105 Longitude: -86.07525

Surface Intake Volume: _____ MGD* Intake Elevation in Relation to Bottom: _____ Ft.

Intake Elevation: _____ Ft. Latitude: _____ Longitude: _____

Name of Surface Water Source: _____

*** MGD – Million Gallons per Day**

Cooling Water Intake Structure Information

Complete D.1 and D.2 if your water supply is provided by an outside source and not by an onsite water intake structure? (e.g., another industry, municipality, etc...)

1. Does the provider of your source water operate a surface water intake? ■ Yes ☐ No
   (If yes, continue, if no, go to Section E.)

   a) Name of Provider: Montgomery Water Works and Sanitary Sewer Board b) Location of Provider: Montgomery, AL (Tallapoosa River)

   c) Latitude: 32.4401 Longitude: -86.1955

2. Is the provider a public water system (defined as a system which provides water to the public for human consumption or which provides only treated water, not raw water)? ■ Yes ☐ No (If yes, go to Section E, if no, continue.)

Only to be completed if you have a cooling water intake structure or the provider of your water supply uses an intake structure and does not treat the raw water.

3. Is any water withdrawn from the source water used for cooling? ☐ Yes ☐ No

4. Using the average monthly measurements over any 12-month period, approximately what percentage of water withdrawn is used exclusively for cooling purposes? _____%

5. Does the cooling water consist of treated effluent that would otherwise be discharged? ☐ Yes ☐ No
   (If yes, go to Section E, if no, complete D.6 – D.17)

6. a. Is the cooling water used in a once-through cooling system? ☐ Yes ☐ No

   b. Is the cooling water used in a closed cycle cooling system? ☐ Yes ☐ No

7. When was the intake installed? _____
   (Please provide dates for all major construction/installation of intake components including screens)

8. What is the maximum intake volume? _____
   (maximum pumping capacity in gallons per day)

9. What is the average intake volume? _____
   (average intake pump rate in gallons per day average in any 30-day period)

10. What is the actual intake flow (AIF) as defined in 40 CFR §125.92(a)? _____MGD

11. How is the intake operated? (e.g., continuously, intermittently, batch) _____

12. What is the mesh size of the screen on your intake? _____

13. What is the intake screen flow-through area? _____

14. What is the through-screen design intake flow velocity? _____ft/sec

15. What is the through-screen actual velocity (in ft/sec)? _____ft/sec

16. What is the mechanism for cleaning the screen? (e.g., does it rotate for cleaning) _____

17. Do you have any additional fish detraction technology on your intake? ☐ Yes ☐ No

18. Have there been any studies to determine the impact of the intake on aquatic organisms? ☐ Yes ☐ No (If yes, please provide.)

19. Attach a site map showing the location of the water intake in relation to the facility, shoreline, water depth, etc.

SECTION E – WASTE STORAGE AND DISPOSAL INFORMATION

Provide a description of the location of all sites involved in the storage of solids or liquids that could be accidentally discharged to a water of the state, either directly or indirectly via such avenues as storm water drainage, municipal wastewater systems, etc., which are located at the facility for which the NPDES application is being made. Where possible, the location should be noted on a map and included with this application:

Description of Waste	Description of Storage Location
Silica fume generated during the production of silica metal	35 acre silica fume slurry pond (Lat. 32.396828, Long. -86.084478)

SECTION F – COASTAL ZONE INFORMATION

Is the discharge(s) located within the 10-foot elevation contour and within the limits of Mobile or Baldwin County? ☐ Yes ☒ No

If yes, complete items F.1 – F.12:

		Yes	No
1.	Does the project require new construction?	☐	☐
2.	Will the project be a source of new air emissions?	☐	☐
3.	Does the project involve dredging and/or filling of a wetland area or water way?	☐	☐
	If Yes, has the Corps of Engineers (COE) permit been received?	☐	☐
	COE Project No. _____		
4.	Does the project involve wetlands and/or submersed grassbeds?	☐	☐
5.	Are oyster reefs located near the project site?	☐	☐
	If Yes, include a map showing project and discharge location with respect to oyster reefs		
6.	Does the project involve the site development, construction and operation of an energy facility as defined in ADEM Admin. Code r. 335-8-1-.02(bb)?	☐	☐
7.	Does the project involve mitigation of shoreline or coastal area erosion?	☐	☐
8.	Does the project involve construction on beaches or dune areas?	☐	☐
9.	Will the project interfere with public access to coastal waters?	☐	☐
10.	Does the project lie within the 100-year floodplain?	☐	☐
11.	Does the project involve the registration, sale, use, or application of pesticides?	☐	☐
12.	Does the project propose or require construction of a new well or to alter an existing groundwater well to pump more than 50 gallons per day (GPD)?	☐	☐
	If yes, has the applicable permit for groundwater recovery or for groundwater well installation been obtained?	☐	☐

SECTION G – ANTI-DEGRADATION EVALUATION

In accordance with 40 CFR §131.12 and the ADEM Admin. Code r. 335-6-10-.04 for anti-degradation, the following information must be provided, if applicable. It is the applicant's responsibility to demonstrate the social and economic importance of the proposed activity. If further information is required to make this demonstration, attach additional sheets to the application.

1. Is this a new or increased discharge that began after April 3, 1991? ☒ Yes ☐ No
   If yes, complete G.2 below. If no, go to Section H.

2. Has an Anti-Degradation Analysis been previously conducted and submitted to the Department for the new or increased discharge referenced in G.1? ☒ Yes ☐ No

   If yes, do not complete this section. If no, and the discharge is to a Tier II waterbody as defined in ADEM Admin. Code r. 335-6-10-.12(4), complete G.2.A – G.2.F below and ADEM Forms 311 and 313 (attached). ADEM Form 313 must be provided for each alternative considered technically viable.

Information required for new or increased discharges to high quality waters:

A. What environmental or public health problem will the discharger be correcting?

B. How much will the discharger be increasing employment (at its existing facility or as the result of locating a new facility)?

C. How much reduction in employment will the discharger be avoiding?

D. How much additional state or local taxes will the discharger be paying?

E. What public service to the community will the discharger be providing?

F. What economic or social benefit will the discharger be providing to the community?

SECTION H – EPA Application Forms

All Applicants must submit EPA permit application forms. More than one application form may be required from a facility depending on the number and types of discharges or outfalls found. The EPA application forms are found on the Department's website at http://www.adem.alabama.gov/programs/water/waterforms.cnt . The EPA application forms must be submitted in duplicate as follows:

1. All applicants must submit Form 1.
2. Applicants for existing industrial facilities (including manufacturing facilities, commercial facilities, mining activities, and silvicultural activities) which discharge process wastewater must submit Form 2C.
3. Applicants for new industrial facilities which propose to discharge process wastewater must submit Form 2D.
4. Applicants for new and existing industrial facilities which discharge only non-process wastewater (i.e., non-contact cooling water and/or sanitary wastewater) must submit Form 2E.
5. Applicants for new and existing facilities whose discharge is composed entirely of storm water associated with industrial activity must submit Form 2F, unless exempted by § 122.26(c)(1)(ii). If the discharge is composed of storm water and non-storm water, the applicant must also submit Forms 2C, 2D, and/or 2E, as appropriate (in addition to Form 2F).

SECTION I – ENGINEERING REPORT/BMP PLAN REQUIREMENTS

See ADEM 335-6-6-.08(i) & (j)

SECTION J– RECEIVING WATERS

Outfall No.	Receiving Water(s)	303(d) Segment?		Included in TMDL?*	
001	Tributary to Miller Creek (stormwater, uncontaminated groundwater)	☐ Yes	☒ No	☐ Yes	☒ No
002	Tributary to Miller Creek (process water)	☐ Yes	☒ No	☐ Yes	☒ No
003	Tributary to Miller Creek (non-contact cooling water)	☐ Yes	☒ No	☐ Yes	☒ No
004	Tallapoosa River (process water and stormwater)	☐ Yes	☒ No	☐ Yes	☒ No
		☐ Yes	☐ No	☐ Yes	☐ No

*If a TMDL Compliance Schedule is requested, the following should be attached as supporting documentation:

(1) Justification for the requested Compliance Schedule (e.g. time for design and installation of control equipment, etc.);

(2) Monitoring results for the pollutant(s) of concern which have not previously been submitted to the Department (sample collection dates, analytical results (mass and concentration), methods utilized, MDL/ML, etc. should be submitted as available);

(3) Requested interim limitations, if applicable;

(4) Date of final compliance with the TMDL limitations; and,

(5) Any other additional information available to support requested compliance schedule.

SECTION K – APPLICATION CERTIFICATION

The information contained in this form must be certified by a responsible official as defined in ADEM Administrative Code r. 335-6-6-.09 "signatories to permit applications and reports" (see below).

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible Official: _____ Date Signed: 8/28/2020

Name: Meredith Bruick Title: Site Leader

If the Responsible Official signing this application is not identified in Section A.7, provide the following information:

Mailing Address: _____

City: _____ State: _____ Zip: _____

Phone Number: _____ Email Address: _____

335-6-6-.09 SIGNATORIES TO PERMIT APPLICATIONS AND REPORTS.

(1) The application for an NPDES permit shall be signed by a responsible official, as indicated below:

(a) In the case of a corporation, by a principal executive officer of at least the level of vice president, or a manager assigned or delegated in accordance with corporate procedures, with such delegation submitted in writing if required by the Department, who is responsible for manufacturing, production, or operating facilities and is authorized to make management decisions which govern the operation of the regulated facility;

(b) In the case of a partnership, by a general partner;

(c) In the case of a sole proprietorship, by the proprietor; or

(d) In the case of a municipal, state, federal, or other public entity, by either a principal executive officer, or ranking elected official.

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0083763	DC Alabama, Inc.	

Form 1 NPDES | EPA

U.S. Environmental Protection Agency
Application for NPDES Permit to Discharge Wastewater

GENERAL INFORMATION

SECTION 1. ACTIVITIES REQUIRING AN NPDES PERMIT (40 CFR 122.21(f) and (f)(1))

Activities Requiring an NPDES Permit

1.1 Applicants *Not Required* to Submit Form 1

1.1.1 Is the facility a new or existing **publicly owned treatment works**?
If yes, STOP. Do NOT complete Form 1. Complete Form 2A.
☑ No

1.1.2 Is the facility a new or existing **treatment works treating domestic sewage**?
If yes, STOP. Do NOT complete Form 1. Complete Form 2S.
☑ No

1.2 Applicants *Required* to Submit Form 1

1.2.1 Is the facility a **concentrated animal feeding operation** or a **concentrated aquatic animal production facility?**
☐ Yes → Complete Form 1 ***and*** Form 2B.
☑ No

1.2.2 Is the facility an **existing** manufacturing, commercial, mining, or silvicultural **facility** that **is currently discharging process wastewater**?
☑ Yes → Complete Form 1 ***and*** Form 2C.
☐ No

1.2.3 Is the facility a **new** manufacturing, commercial, mining, or silvicultural **facility** that has **not yet commenced to discharge**?
☐ Yes → Complete Form 1 ***and*** Form 2D.
☑ No

1.2.4 Is the facility a **new or existing** manufacturing, commercial, mining, or silvicultural **facility** that **discharges only nonprocess wastewater**?
☐ Yes → Complete Form 1 ***and*** Form 2E.
☑ No

1.2.5 Is the facility a **new or existing facility** whose discharge is composed entirely of **stormwater associated with industrial activity** or whose discharge is composed of **both stormwater and non-stormwater**?
☑ Yes → Complete Form 1 ***and*** Form 2F unless exempted by 40 CFR 122.26(b)(14)(x) or (b)(15).
☐ No

SECTION 2. NAME, MAILING ADDRESS, AND LOCATION (40 CFR 122.21(f)(2))

Name, Mailing Address, and Location

2.1 Facility Name

DC Alabama, Inc.

2.2 EPA Identification Number

AL0083763

2.3 Facility Contact

Name (first and last)	Title	Phone number
Shawonda Brockington	EHS Site Leader	(334) 270-3609

Email address
SBrockington@dow.com

2.4 Facility Mailing Address

Street or P.O. box
1940 Ohio Ferro Road

City or town	State	ZIP code
Mount Meigs	AL	36057

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0083763	DC Alabama, Inc.	

Name, Mailing Address, and Location Continued

2.5 **Facility Location**

Street, route number, or other specific identifier
1940 Ohio Ferro Road

County name	County code (if known)	
Montgomery		

City or town	State	ZIP code
Mount Meigs	AL	36057

SECTION 3. SIC AND NAICS CODES (40 CFR 122.21(f)(3))

SIC and NAICS Codes

3.1	**SIC Code(s)**	**Description** (optional)
	3313	Electrometallurgical Products, except steel

3.2	**NAICS Code(s)**	**Description** (optional)

SECTION 4. OPERATOR INFORMATION (40 CFR 122.21(f)(4))

Operator Information

4.1 **Name of Operator**

DC Alabama, Inc.

4.2 Is the name you listed in Item 4.1 also the owner?

☑ Yes ☐ No

4.3 **Operator Status**

☐ Public—federal ☐ Public—state ☐ Other public (specify)_____

☑ Private ☐ Other (specify) _____

4.4 **Phone Number of Operator**

(334) 270-3737

Operator Information Continued

4.5 **Operator Address**

Street or P.O. Box
1940 Ohio Ferro Road

City or town	State	ZIP code
Mount Meigs	AL	36057

Email address of operator
MRBruick@dow.com

SECTION 5. INDIAN LAND (40 CFR 122.21(f)(5))

Indian Land

5.1 Is the facility located on Indian Land?

☐ Yes ☑ No

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0083763	DC Alabama, Inc.	

SECTION 6. EXISTING ENVIRONMENTAL PERMITS (40 CFR 122.21(f)(6))

Existing Environmental Permits

6.1 **Existing Environmental Permits** (check all that apply and print or type the corresponding permit number for each)

☑ NPDES (discharges to surface water) AL0083763, ALR10BEN2	☐ RCRA (hazardous wastes)	☐ UIC (underground injection of fluids)
☐ PSD (air emissions)	☐ Nonattainment program (CAA)	☐ NESHAPs (CAA)
☐ Ocean dumping (MPRSA)	☐ Dredge or fill (CWA Section 404)	☑ Other (specify) MSOP 209-0026

SECTION 7. MAP (40 CFR 122.21(f)(7))

Map

7.1 Have you attached a topographic map containing all required information to this application? (See instructions for specific requirements.)

☑ Yes ☐ No ☐ CAFO—Not Applicable (See requirements in Form 2B.)

SECTION 8. NATURE OF BUSINESS (40 CFR 122.21(f)(8))

Nature of Business

8.1 Describe the nature of your business.

The facility produces silicon metal used in chemical and aluminum products. The facility also produces micro silica (fume), which is used as a strengthener and filler by the concrete and refractory industries. The manufacturing process includes melting raw materials (quartz rock, coal, charcoal, and wood chips) in an electric arc furnace to produce molten silicon metal, which is cast as ingots. The ingots are crushed before being packaged for shipping.

SECTION 9. COOLING WATER INTAKE STRUCTURES (40 CFR 122.21(f)(9))

Cooling Water Intake Structures

9.1 Does your facility use cooling water?

☑ Yes ☐ No → SKIP to Item 10.1.

9.2 Identify the source of cooling water. (Note that facilities that use a cooling water intake structure as described at 40 CFR 125, Subparts I and J may have additional application requirements at 40 CFR 122.21(r). Consult with your NPDES permitting authority to determine what specific information needs to be submitted and when.)

On-site groundwater wells and public water system

SECTION 10. VARIANCE REQUESTS (40 CFR 122.21(f)(10))

Variance Requests

10.1 Do you intend to request or renew one or more of the variances authorized at 40 CFR 122.21(m)? (Check all that apply. Consult with your NPDES permitting authority to determine what information needs to be submitted and when.)

- ☐ Fundamentally different factors (CWA Section 301(n))
- ☐ Water quality related effluent limitations (CWA Section 302(b)(2))
- ☐ Non-conventional pollutants (CWA Section 301(c) and (g))
- ☐ Thermal discharges (CWA Section 316(a))
- ☑ Not applicable

EPA Identification Number	NPDES Permit Number	Facility Name	Form Approved 03/05/19 OMB No. 2040-0004
	AL0083763	DC Alabama, Inc.	

SECTION 11. CHECKLIST AND CERTIFICATION STATEMENT (40 CFR 122.22(a) and (d))

Checklist and Certification Statement

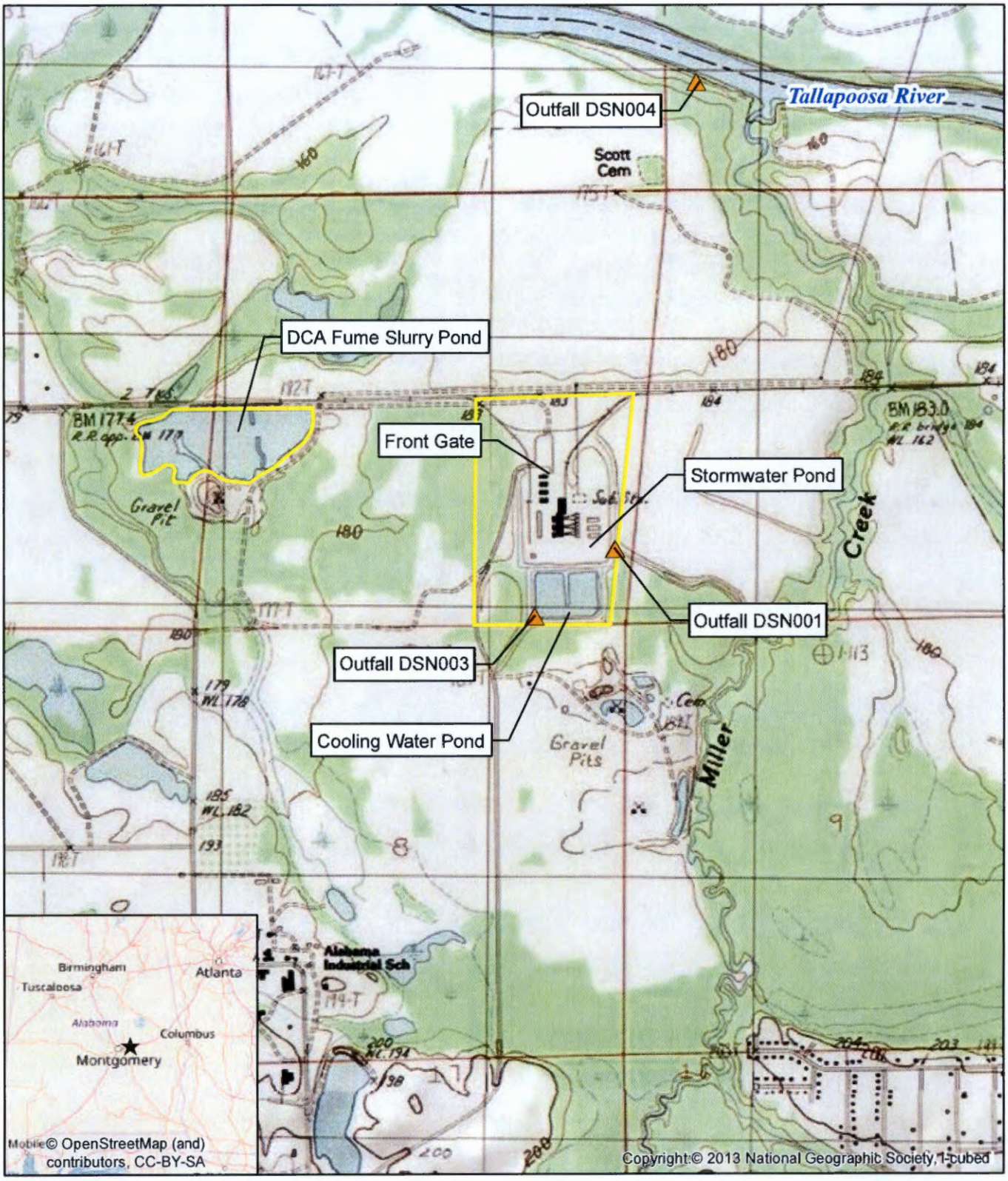
11.1 In Column 1 below, mark the sections of Form 1 that you have completed and are submitting with your application. For each section, specify in Column 2 any attachments that you are enclosing to alert the permitting authority. Note that not all applicants are required to provide attachments.

Column 1	Column 2
☑ Section 1: Activities Requiring an NPDES Permit	☐ w/ attachments
☑ Section 2: Name, Mailing Address, and Location	☐ w/ attachments
☑ Section 3: SIC Codes	☐ w/ attachments
☑ Section 4: Operator Information	☐ w/ attachments
☑ Section 5: Indian Land	☐ w/ attachments
☑ Section 6: Existing Environmental Permits	☐ w/ attachments
☑ Section 7: Map	☑ w/ topographic map ☐ w/ additional attachments
☑ Section 8: Nature of Business	☐ w/ attachments
☑ Section 9: Cooling Water Intake Structures	☐ w/ attachments
☑ Section 10: Variance Requests	☐ w/ attachments
☑ Section 11: Checklist and Certification Statement	☐ w/ attachments

11.2 **Certification Statement**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name (print or type first and last name)	Official title
Meredith Bruick	Site Leader
Signature	**Date signed**
	8-27-2020



Legend

- Property Boundary
- Outfall Location

N

0 1,000 2,000
Feet

Figure 1
Topographic Map
2019 Individual NPDES Permit
Modification *DC Alabama, Inc. Facility*
Mt. Meigs, Alabama

JACOBS

DOW

May 6, 2019

The Dow Chemical Company
1940 Ohio Ferro Road
Mt. Meigs, AL 36057

Alabama Department of Environmental Management (ADEM)
Water Division - Industrial Section
P.O. Box 301463
Montgomery, AL 36130-1463

R# 19-48869

Minor NPDES Permit Modification - Dow Corning Alabama Inc., Permit No. ALG0083763

Dear Mr. Ramsey,

DC Alabama, Inc. is requesting that NPDES permit number AL0083763 be modified to include the discharge of stormwater at outfall DSN004 to the Tallapoosa River. This change reflects the collection and treatment of stormwater runoff from the facility's industrial process area (approximately 10 acres) and routing of the treated stormwater to outfall DSN004 (Tallapoosa River).

Please find attached EPA Form 1, ADEM Form 187, a revised flow diagram, EPA Form 2C, and EPA Form 2F. The payment receipt in the amount of $3,120 was made via the ADEM online payment system and is also enclosed for a Minor NPDES Permit Modification per ADEM Fee Schedule D – Water Permits.

If you have questions about any of the attachments or need additional information, please contact Shawonda Brockington at (334) 270-3609.

Sincerely,

Tim W. Dermon

Tim Dermon
DC Alabama Site Leader
Attachments

ALABAMA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (ADEM)
NPDES INDIVIDUAL PERMIT APPLICATION
SUPPLEMENTARY INFORMATION FOR INDUSTRIAL FACILITIES

Instructions: This form should be used to submit the required supplementary information for an application for an NPDES individual permit for industrial facilities. The completed application should be submitted to ADEM in duplicate. If insufficient space is available to address any item, please continue on an attached sheet of paper. Please mark "N/A" in the appropriate box when an item is not applicable to the applicant. **Please type or print legibly in blue or black ink.** Mail the completed application to:

ADEM-Water Division
Industrial Section
P O Box 301463
Montgomery, AL 36130-1463

RECEIVED
MAY 07 2019
IND. MUN BRANCH

PURPOSE OF THIS APPLICATION

- ☐ Initial Permit Application for New Facility*
- ☐ Initial Permit Application for Existing Facility*
- ■ Modification of Existing Permit
- ☐ Reissuance of Existing Permit
- ☐ Revocation & Reissuance of Existing Permit

* *An application for participation in the ADEM's Electronic Environmental (E2) Reporting must be submitted to allow permittee to electronically submit reports as required.*

SECTION A – GENERAL INFORMATION

1. Facility Name: DC Alabama, Inc.
   a. Operator Name: DC Alabama, Inc.
   b. Is the operator identified in A.1.a, the owner of the facility? ■ Yes ☐ No
   If no, provide name and address of the operator and submit information indicating the operator's scope of responsibility for the facility.
2. NPDES Permit Number: AL 0 0 8 3 7 6 3 (not applicable if initial permit application)
3. SID Permit Number (if applicable): IU ___ ___ - ___ ___ - ___ ___ ___ ___ ___
4. NPDES General Permit Number (if applicable): ALG ___ ___ ___ ___ ___ ___
5. Facility Physical Location: **(Attach a map with location marked; street, route no. or other specific identifier)**
   Street: 1940 Ohio Ferro Road
   City: Mount Meigs County: Montgomery State: Alabama Zip: 36057
   Facility Location (Front Gate): Latitude: (32) (23) (45.39) Longitude: (-86) (04) (21.36)
6. Facility Mailing Address: 1940 Ohio Ferro Road
   City: Mount Meigs County: Montgomery State: Alabama Zip: 36057
7. Responsible Official (as described on the last page of this application):
   Name and Title: Tim Dermon, Site Leader
   Address: 1940 Ohio Ferro Road
   City: Mount Meigs State: Alabama Zip: 36057
   Phone Number: 334-270-3737 Email Address: tim.dermon@dow.com
8. Designated Facility Contact:
   Name and Title: Shawonda Brockington, Site EHS Delivery Leader
   Phone Number: 334-270-3609 Email Address: sbrockington@dow.com

9. Designated Discharge Monitoring Report (DMR) Contact:

Name and Title: Shawonda Brockington, Site EHS Delivery Leader

Phone Number: 334-270-3609 Email Address: sbrockington@dow.com

10. Type of Business Entity:

☒ Corporation ☐ General Partnership ☐ Limited Partnership ☐ Limited Liability Company ☐ Sole Proprietorship

☐ Other (Please Specify)

11. Complete this section if the Applicant's business entity is a Corporation

a) Location of Incorporation:

Address: 1940 Ohio Ferro Road

City: Mount Meigs County: Montgomery State: Alabama Zip: 36057

b) Parent Corporation of Applicant:

Name: The Dow Chemical Corporation

Address: 2040 Dow Center

City: Midland State: Michigan Zip: 48647

c) Subsidiary Corporation(s) of Applicant:

Name: Not Applicable

Address:

City: State: Zip:

d) Corporate Officers:

Name: David H. Ott, President

Address: P.O. Box 68

City: Mount Meigs State: Alabama Zip: 36057

Name: Johnathan P. Wendt, Secretary

Address: P.O. Box 68

City: Mount Meigs State: Alabama Zip: 36057

e) Agent designated by the corporation for purposes of service:

Name: Tim Dermon

Address: P.O. Box 68

City: Mount Meigs State: Alabama Zip: 36057

12. If the Applicant's business entity is a Partnership, please list the general partners.

Name: Not Applicable Name:

Address: Address:

City: State: Zip: City: State: Zip:

13. If the Applicant's business entity is a Proprietorship, please enter the proprietor's information.

Name: Not Applicable

Address: _____

City: _____ State: _____ Zip: _____

14. Permit numbers for Applicant's previously issued NPDES Permits and identification of any other State of Alabama Environmental Permits presently held by the Applicant, its parent corporation, or subsidiary corporations within the State of Alabama:

Permit Name	Permit Number	Held By
NPDES General Permit	ALG120051	DC Alabama, Inc.
NPDES Individual Permit	AL0083763	DC Alabama, Inc.
Major Source Operating Permit	209-0026	DC Alabama, Inc.
NPDES General Permit	ALR10BEN2	DC Alabama, Inc.

15. Identify all Administrative Complaints, Notices of Violation, Directives, Administrative Orders, or Litigation concerning water pollution, if any, against the Applicant, its parent corporation or subsidiary corporations within the State of Alabama within the past five years (attach additional sheets if necessary):

Facility Name	Permit Number	Type of Action	Date of Action
DC Alabama, Inc.	ALG120051	Consent Order	10/30/2018
DC Alabama, Inc.	ALG120051	Notice of Violation	03/12/2018

SECTION B – BUSINESS ACTIVITY

1. Indicate applicable Standard Industrial Classification (SIC) Codes for all processes. If more than one applies, list in order of importance:

a. 3313

b. _____

c. _____

d. _____

e. _____

f. _____

2. If your facility conducts or will be conducting any of the processes listed below (regardless of whether they generate wastewater, waste sludge, or hazardous waste), place a check beside the category of business activity (check all that apply):

Industrial Categories

- ☐ Aluminum Forming
- ☐ Asbestos Manufacturing
- ☐ Battery Manufacturing
- ☐ Can Making
- ☐ Canned and Preserved Fruit and Vegetables
- ☐ Canned and Preserved Seafood
- ☐ Cement Manufacturing
- ☐ Centralized Waste Treatment
- ☐ Carbon Black
- ☐ Coal Mining
- ☐ Coil Coating
- ☐ Copper Forming
- ☐ Electric and Electronic Components Manufacturing
- ☐ Electroplating
- ☐ Explosives Manufacturing
- ☐ Feedlots
- ☐ Ferroalloy Manufacturing
- ☐ Fertilizer Manufacturing
- ☐ Foundries (Metal Molding and Casting)
- ☐ Glass Manufacturing
- ☐ Grain Mills
- ☐ Gum and Wood Chemicals Manufacturing
- ☐ Inorganic Chemicals
- ☐ Iron and Steel
- ☐ Leather Tanning and Finishing
- ☐ Metal Finishing
- ☐ Meat Products
- ☐ Metal Molding and Casting
- ☐ Metal Products
- ☐ Nonferrous Metals Forming
- ☐ Nonferrous Metals Manufacturing
- ☐ Oil and Gas Extraction
- ☐ Organic Chemicals Manufacturing
- ☐ Paint and Ink Formulating
- ☐ Paving and Roofing Manufacturing
- ☐ Pesticides Manufacturing
- ☐ Petroleum Refining
- ☐ Phosphate Manufacturing
- ☐ Photographic
- ☐ Pharmaceutical
- ☐ Plastic & Synthetic Materials
- ☐ Plastics Processing Manufacturing
- ☐ Porcelain Enamel
- ☐ Pulp, Paper, and Fiberboard Manufacturing
- ☐ Rubber
- ☐ Soap and Detergent Manufacturing
- ☐ Steam and Electric
- ☐ Sugar Processing
- ☐ Textile Mills
- ☐ Timber Products
- ☐ Transportation Equipment Cleaning
- ☐ Waste Combustion
- ☐ Other (specify)_____

A facility with processes inclusive in these business areas may be covered by Environmental Protection (EPA) categorical standards. These facilities are termed "categorical users" and should skip to question 2 of Section C.

3. Give a brief description of all operations at this facility including primary products or services (attach additional sheets if necessary):

The facility produces silicon metal used in chemical and aluminum products. The facility also produces micro silica (fume) which is used as a strengthener and filler by the concrete and refractory industries. The manufacturing process includes melting raw materials (quartz rock, coal, charcoal, and wood chips) in an electric arc furnace to produce molten silicon metal, which is cast as ingots. The ingots are crushed before being packaged for shipping.

SECTION C – WASTEWATER DISCHARGE INFORMATION

Facilities that checked activities in B.2 and are considered Categorical Industrial Users should skip to C.2 of this section.

1. **For Non-Categorical Users Only**: Provide wastewater flows for each of the processes or proposed processes. Using the process flow schematic (Figure 1), enter the description that corresponds to each process. **(The flow schematic should include all treatment units as well as monitoring and discharge points).** [New facilities should provide estimates for each discharge.]

Process Description	Last 12 Months (gals/day) Highest Month Avg. Flow	Highest Flow Year of Last 5 (gals/day) Monthly Avg. Flow	Discharge Type (batch, continuous, intermittent)
Slurry pond dewatering	288,000 - projected	504,000 - projected	continuous

If batch discharge occurs or will occur, indicate: [new facilities may estimate.]

a. Number of batch discharges: _____ per day

b. Average discharge per batch: _____ (GPD)

c. Time of batch discharges _____ (days of week) at _____ (hours of day)

d. Flow rate: _____ gallons/minute

e. Percent of total discharge: _____

Non-Process Discharges (e.g. non-contact cooling water)	Last 12 Months (gals/day) Highest Month Avg. Flow	Highest Flow Year of Last 5 (gals/day) Monthly Avg. Flow
Non-contact cooling water	No discharge	No discharge

2. **Complete this Section only if you are subject to Categorical Standards and plan to directly discharge the associated wastewater to a water of the State.** If Categorical wastewater is discharged exclusively via an indirect discharge to a public or privately-owned treatment works, check "Yes" in the appropriate space below and proceed directly to part 2.c .

☐ Yes

For Categorical Users: Provide the wastewater discharge flows or production (whichever is applicable by the effluent guidelines) for each of your processes or proposed processes. Using the process flow schematic (Figure 1, pg 14), enter the description that corresponds to each process. [New facilities should provide estimates for each discharge.]

2a.

Regulated Process	Applicable Category	Applicable Subpart	Type of Discharge Flow (batch, continuous, intermittent)

2b.

Process Description	Last 12 Months (gals/day), (lbs/day), etc. Highest Month Average*	Highest Flow Year of Last 5 (gals/day), (lbs/day), etc. Monthly Average*	Discharge Type (batch, continuous, intermittent)

*** Reported values should be expressed in units of the applicable Federal production-based standard. For example, flow (MGD), production (pounds per day), etc.**

If batch discharge occurs or will occur, indicate: [new facilities may estimate.]

a. Number of batch discharges: _____ per day

b. Average discharge per batch: _____ (GPD)

c. Time of batch discharges _____ (days of week) at _____ (hours of day)

d. Flow rate: _____ gallons/minute

e. Percent of total discharge: _____

2c.

Non categorical Process Description	Last 12 Months (gals/day) Highest Month Avg. Flow	Highest Flow Year of Last 5 (gals/day) Monthly Avg. Flow	Discharge Type (batch, continuous, intermittent)

If batch discharge occurs or will occur, indicate: [new facilities may estimate.]

a. Number of batch discharges: _____ per day

b. Average discharge per batch: _____ (GPD)

c. Time of batch discharges _____ (days of week) at _____ (hours of day)

d. Flow rate: _____ gallons/minute

e. Percent of total discharge: _____

2d.

Non-Process Discharges (e.g. non-contact cooling water)	Last 12 Months (gals/day) Highest Month Avg. Flow	Highest Flow Year of Last 5 (gals/day) Monthly Avg. Flow

All Applicants must complete C.3 – C.6.

3. Do you share an outfall with another facility? ■ Yes ☐ No (If no, continue to C.4)

For each shared outfall, provide the following:

Applicant's Outfall No.	Name of Other Permittee/Facility	NPDES Permit No.	Where is sample collected by Applicant?
DSN004	Montgomery Water Works and Sanitary Sewer Board	AL0082431	After final treatment and before outfall

4. Do you have, or plan to have, automatic sampling equipment or continuous wastewater flow metering equipment at this facility?

Current:	Flow Metering	☐ Yes	■ No	☐ N/A
	Sampling Equipment	☐ Yes	■ No	☐ N/A
Planned:	Flow Metering	■ Yes	☐ No	☐ N/A
	Sampling Equipment	■ Yes	☐ No	☐ N/A

If so, please attach a schematic diagram of the sewer system indicating the present or future location of this equipment and describe the equipment below:

Flow rate through the treatment system will be logged using a flow totalizer. A 24-hour composite sampler will be installed after final treatment and prior to discharge. See the attached flow diagram.

5. Are any process changes or expansions planned during the next three years that could alter wastewater volumes or characteristics?
■ Yes ☐ No (If no, continue to C.6)

Briefly describe these changes and their anticipated effects on the wastewater volume and characteristics:

After the slurry pond is dewatered and closed in place, the process wastewater discharge will cease. The only discharges from the facility at that time will be stormwater and, possibly, non-contact cooling water.

6. List the trade name and chemical composition of all biocides and corrosion inhibitors used:

Trade Name	Chemical Composition
Acutrace 3014	See attached biocide sheet
Acubrome Liquid	See attached biocide sheet
Sodium Hypochlorite	See attached biocide sheet

For each biocide and/or corrosion inhibitor used, please include the following information:

(1) 96-hour median tolerance limit data for organisms representative of the biota of the waterway into which the discharge will ultimately reach,
(2) quantities to be used,
(3) frequencies of use,
(4) proposed discharge concentrations, and
(5) EPA registration number, if applicable

SECTION D – WATER SUPPLY

Water Sources (check as many as are applicable):

☒ Private Well ☐ Surface Water

☒ Municipal Water Utility (Specify City): Montgomery, AL ☐ Other (Specify): _____

IF MORE THAN ONE WELL OR SURFACE INTAKE, PROVIDE DATA FOR EACH ON AN ATTACHMENT

City: 0.002 MGD* Well: 0.72 MGD* Well Depth: 533 Ft. Latitude: 32.39105 Longitude: -86.07525

Surface Intake Volume: _____ MGD* Intake Elevation in Relation to Bottom: _____ Ft.

Intake Elevation: _____ Ft. Latitude: _____ Longitude: _____

Name of Surface Water Source: _____

*** MGD – Million Gallons per Day**

Cooling Water Intake Structure Information

Complete D.1 and D.2 if your water supply is provided by an outside source and not by an onsite water intake structure? (e.g., another industry, municipality, etc...)

1. Does the provider of your source water operate a surface water intake? Yes ☒ No ☐
   (If yes, continue, if no, go to Section E.)

   a) Name of Provider: Montgomery Water Works and Sanitary Sewer Board b) Location of Provider: Montgomery, Alabama (Tallapoosa River)

   c) Latitude: 32.4401 Longitude: -86.1955

2. Is the provider a public water system (defined as a system which provides water to the public for human consumption or which provides only treated water, not raw water)? ☒ Yes ☐ No (If yes, go to Section E, if no, continue.)

Only to be completed if you have a cooling water intake structure or the provider of your water supply uses an intake structure and does not treat the raw water.

3. Is any water withdrawn from the source water used for cooling? ☐ Yes ☐ No

4. Using the average monthly measurements over any 12-month period, approximately what percentage of water withdrawn is used exclusively for cooling purposes? _____%

5. Does the cooling water consist of treated effluent that would otherwise be discharged? ☐ Yes ☐ No
   (If yes, go to Section E, if no, complete D.6 – D.17)

6. a. Is the cooling water used in a once-through cooling system? ☐ Yes ☐ No

   b. Is the cooling water used in a closed cycle cooling system? ☐ Yes ☐ No

7. When was the intake installed? _____
(Please provide dates for all major construction/installation of intake components including screens)

8. What is the maximum intake volume? _____
(maximum pumping capacity in gallons per day)

9. What is the average intake volume? _____
(average intake pump rate in gallons per day average in any 30-day period)

10. What is the actual intake flow (AIF) as defined in 40 CFR §125.92(a)? _____MGD

11. How is the intake operated? (e.g., continuously, intermittently, batch) _____

12. What is the mesh size of the screen on your intake? _____

13. What is the intake screen flow-through area? _____

14. What is the through-screen design intake flow velocity? _____ft/sec

15. What is the through-screen actual velocity (in ft/sec)? _____ft/sec

16. What is the mechanism for cleaning the screen? (e.g., does it rotate for cleaning) _____

17. Do you have any additional fish detraction technology on your intake? ☐ Yes ☐ No

18. Have there been any studies to determine the impact of the intake on aquatic organisms? ☐ Yes ☐ No (If yes, please provide.)

19. Attach a site map showing the location of the water intake in relation to the facility, shoreline, water depth, etc.

SECTION E – WASTE STORAGE AND DISPOSAL INFORMATION

Provide a description of the location of all sites involved in the storage of solids or liquids that could be accidentally discharged to a water of the state, either directly or indirectly via such avenues as storm water drainage, municipal wastewater systems, etc., which are located at the facility for which the NPDES application is being made. Where possible, the location should be noted on a map and included with this application:

Description of Waste	Description of Storage Location
Silica fume generated during the production of silica metal	35 acre silica fume slurry pond (Lat. 32.396828°, Lon. -86.084478°)

Provide a description of the location of the ultimate disposal sites of solid or liquid waste by-products (such as sludges) from any wastewater treatment system located at the facility.

Description of Waste	Quantity (lbs/day)	Disposal Method*
Sludge from dewatering and treatment of Slurry Pond	36,000	On site (within slurry pond)
Sludge from treatment of process area stormwater	8,000	On site (within slurry pond)

***Indicate which wastes identified above are disposed of at an off-site treatment facility and which are disposed of on-site. If any wastes are sent to an off-site centralized waste treatment facility, identify the waste and the facility.**

SECTION F – COASTAL ZONE INFORMATION

Is the discharge(s) located within the 10-foot elevation contour and within the limits of Mobile or Baldwin County? ☐ Yes ☒ No

If yes, complete items F.1 – F.12:

	Yes	No
1. Does the project require new construction?	☐	☐
2. Will the project be a source of new air emissions?	☐	☐

		Yes	No
3.	Does the project involve dredging and/or filling of a wetland area or water way?	☐	☐
	If Yes, has the Corps of Engineers (COE) permit been received?	☐	☐
	COE Project No. _____		
4.	Does the project involve wetlands and/or submersed grassbeds?	☐	☐
5.	Are oyster reefs located near the project site?	☐	☐
	If Yes, include a map showing project and discharge location with respect to oyster reefs		
6.	Does the project involve the site development, construction and operation of an energy facility as defined in ADEM Admin. Code r. 335-8-1-.02(bb)?	☐	☐
7.	Does the project involve mitigation of shoreline or coastal area erosion?	☐	☐
8.	Does the project involve construction on beaches or dune areas?	☐	☐
9.	Will the project interfere with public access to coastal waters?	☐	☐
10.	Does the project lie within the 100-year floodplain?	☐	☐
11.	Does the project involve the registration, sale, use, or application of pesticides?	☐	☐
12.	Does the project propose or require construction of a new well or to alter an existing groundwater well to pump more than 50 gallons per day (GPD)?	☐	☐
	If yes, has the applicable permit for groundwater recovery or for groundwater well installation been obtained?	☐	☐

SECTION G – ANTI-DEGRADATION EVALUATION

In accordance with 40 CFR §131.12 and the ADEM Admin. Code r. 335-6-10-.04 for anti-degradation, the following information must be provided, if applicable. It is the applicant's responsibility to demonstrate the social and economic importance of the proposed activity. If further information is required to make this demonstration, attach additional sheets to the application.

1. Is this a new or increased discharge that began after April 3, 1991? ■ Yes ☐ No
   If yes, complete G.2 below. If no, go to Section H.

2. Has an Anti-Degradation Analysis been previously conducted and submitted to the Department for the new or increased discharge referenced in G.1? ■ Yes ☐ No

   If yes, do not complete this section. If no, and the discharge is to a Tier II waterbody as defined in ADEM Admin. Code r. 335-6-10-.12(4), complete G.2.A – G.2.F below and ADEM Forms 311 and 313 (attached). ADEM Form 313 must be provided for each alternative considered technically viable.

   Information required for new or increased discharges to high quality waters:

   A. What environmental or public health problem will the discharger be correcting?

   _____

   B. How much will the discharger be increasing employment (at its existing facility or as the result of locating a new facility)?

   _____

   C. How much reduction in employment will the discharger be avoiding?

   _____

   D. How much additional state or local taxes will the discharger be paying?

   _____

   E. What public service to the community will the discharger be providing?

   _____

   F. What economic or social benefit will the discharger be providing to the community?

   _____

SECTION H – EPA Application Forms

All Applicants must submit EPA permit application forms. More than one application form may be required from a facility depending on the number and types of discharges or outfalls found. The EPA application forms are found on the Department's website at http://www.adem.alabama.gov/programs/water/waterforms.cnt . The EPA application forms must be submitted in duplicate as follows:

1. All applicants must submit Form 1.
2. Applicants for existing industrial facilities (including manufacturing facilities, commercial facilities, mining activities, and silvicultural activities) which discharge process wastewater must submit Form 2C.
3. Applicants for new industrial facilities which propose to discharge process wastewater must submit Form 2D.
4. Applicants for new and existing industrial facilities which discharge only non-process wastewater (i.e., non-contact cooling water and/or sanitary wastewater) must submit Form 2E.
5. Applicants for new and existing facilities whose discharge is composed entirely of storm water associated with industrial activity must submit Form 2F, unless exempted by § 122.26(c)(1)(ii). If the discharge is composed of storm water and non-storm water, the applicant must also submit Forms 2C, 2D, and/or 2E, as appropriate (in addition to Form 2F).

SECTION I – ENGINEERING REPORT/BMP PLAN REQUIREMENTS

See ADEM 335-6-6-.08(i) & (j)

SECTION J– RECEIVING WATERS

Outfall No.	Receiving Water(s)	303(d) Segment?	Included in TMDL?*
001	Unnamed tributary to Miller Creek (stormwater)	☐ Yes ■No	☐ Yes ■No
002	Unnamed tributary to Miller Creek (process water)	☐ Yes ■No	☐ Yes ■No
003	Unnamed tributary to Miller Creek (non-contact cooling water)	☐ Yes ■No	☐ Yes ■No
004	Tallapoosa River (process water and stormwater)	☐ Yes ■No	☐ Yes ■No
		☐ Yes ■No	☐ Yes ■No

*If a TMDL Compliance Schedule is requested, the following should be attached as supporting documentation:

(1) Justification for the requested Compliance Schedule (e.g. time for design and installation of control equipment, etc.);

(2) Monitoring results for the pollutant(s) of concern which have not previously been submitted to the Department (sample collection dates, analytical results (mass and concentration), methods utilized, MDL/ML, etc. should be submitted as available);

(3) Requested interim limitations, if applicable;

(4) Date of final compliance with the TMDL limitations; and,

(5) Any other additional information available to support requested compliance schedule.

SECTION K – APPLICATION CERTIFICATION

The information contained in this form must be certified by a responsible official as defined in ADEM Administrative Code r. 335-6-6-.09 "signatories to permit applications and reports" (see below).

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations."

Signature of Responsible Official: Tim D. Dermon Date Signed: 5/6/2019

Name and Title: Tim Dermon, Site Leader

If the Responsible Official signing this application is not identified in Section A.7, provide the following information:

Mailing Address: _____

City: _____ State: _____ Zip: _____

Phone Number: _____ Email Address: _____

335-6-6-.09 SIGNATORIES TO PERMIT APPLICATIONS AND REPORTS.

(1) The application for an NPDES permit shall be signed by a responsible official, as indicated below:

(a) In the case of a corporation, by a principal executive officer of at least the level of vice president, or a manager assigned or delegated in accordance with corporate procedures, with such delegation submitted in writing if required by the Department, who is responsible for manufacturing, production, or operating facilities and is authorized to make management decisions which govern the operation of the regulated facility;

(b) In the case of a partnership, by a general partner;

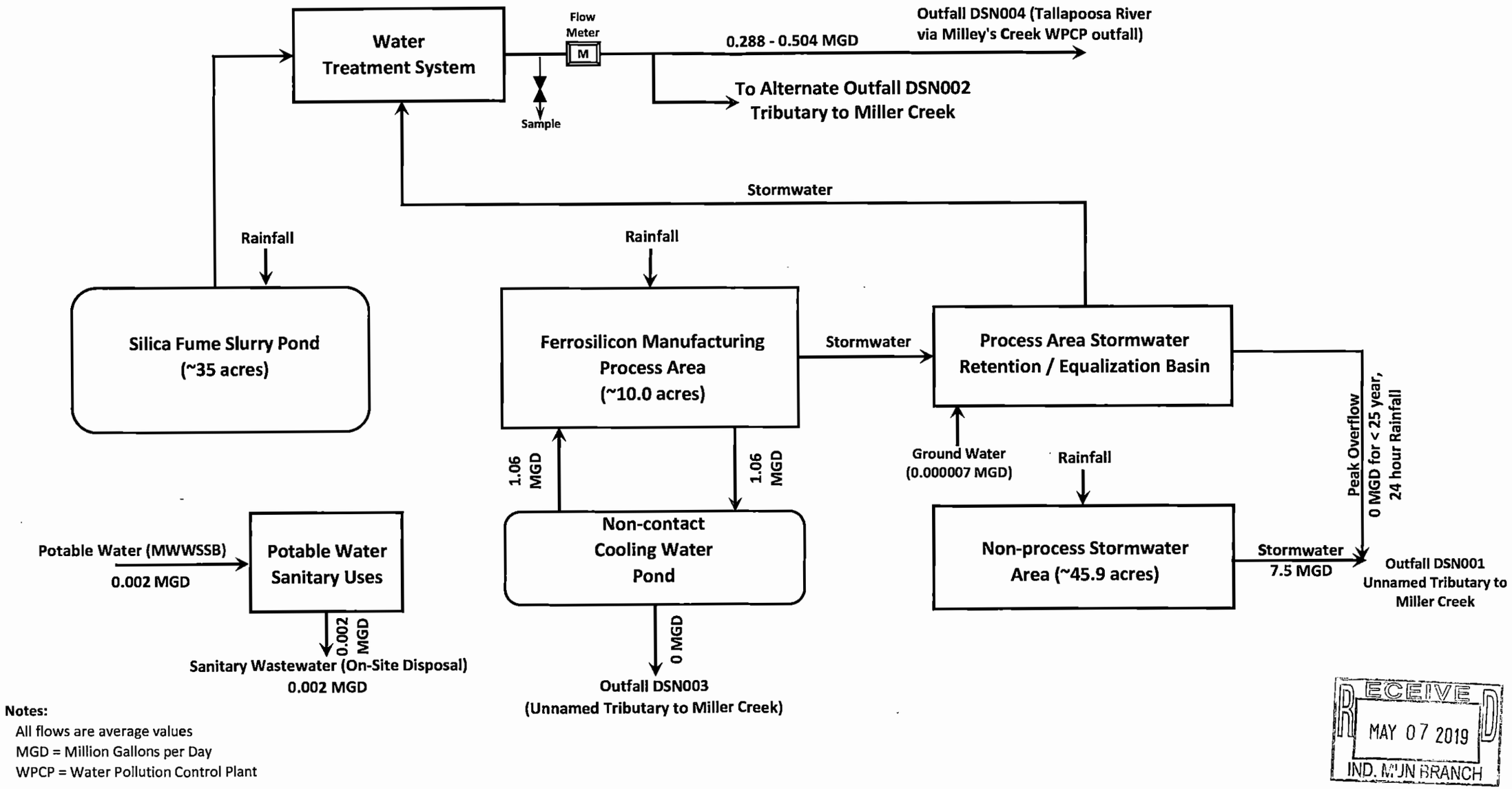
(c) In the case of a sole proprietorship, by the proprietor; or

(d) In the case of a municipal, state, federal, or other public entity, by either a principal executive officer, or ranking elected official.

Biocide Information
Individual NPDES Permit Modification
DC Alabama Inc., Mt. Meigs, Alabama

Trade Name	Sodium Hypochlorite	Acutrace 3014	Acubrome Liquid
Composition	Sodium Chloride, 5-20% (weight) Sodium Hypochlorite, 10-20% (weight) Sodium Hydroxide, <1% (weight) Water, 60-85% (weight)	Sodium hydroxide, 10-15% (weight) 1-Hydroxyethylidene-1-diphosphonic acid, 4-8% (weight) Sodium tolytriazole, 2-4% (weight) Sodium molybdate, 3-5% (weight) Polymaleic acid, 4-8% (weight)	Sodium Bromide, 40%
96-hour median tolerance limit	Daphnia Magna, 48h, EC50, 874 mg/L	Fathead Minnow, 96h, LC50, 976 mg/L Daphnia Magna, 48h, LC50, 1569 mg/L	Fathead Minnow, 96h, LC50, >5,000 mg/L Daphnia Magna, 48h, LC50, >5,000 mg/L
Quantity to be used	14 gallons/day	7 gallons/day	1 gallon/day
Frequency of use	Daily	Daily	Daily
Proposed discharge concentration	None discharged	None discharged	None discharged
EPA registration number (if applicable)	Not applicable	Not applicable	Not applicable

Figure 2
Plant Water Balance
DC Alabama, Inc., Mount Meigs, Alabama



Notes:

All flows are average values
MGD = Million Gallons per Day
WPCP = Water Pollution Control Plant

Please print or type in the unshaded areas only.

Form Approved. OMB No. 2040-0086.

FORM 1 GENERAL

U.S. ENVIRONMENTAL PROTECTION AGENCY
GENERAL INFORMATION
Consolidated Permits Program
(Read the "General Instructions" before starting.)

I. EPA I.D. NUMBER: S F AL0083763 T/A C D

LABEL ITEMS	
I.	EPA I.D. NUMBER
III.	FACILITY NAME
V.	FACILITY MAILING ADDRESS
VI.	FACILITY LOCATION

PLEASE PLACE LABEL IN THIS SPACE

GENERAL INSTRUCTIONS

If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent *(the area to the left of the label space lists the information that should appear)*, please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete Items I, III, V, and VI *(except VI-B which must be completed regardless)*. Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.

II. POLLUTANT CHARACTERISTICS

INSTRUCTIONS: Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column if the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity is excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of **bold-faced terms**.

SPECIFIC QUESTIONS	Mark "X" YES	NO	FORM ATTACHED
A. Is this facility a **publicly owned treatment works** which results in a **discharge** to **waters of the U.S.**? (FORM 2A)		X	
B. Does or will this facility *(either existing or proposed)* include a **concentrated animal feeding operation** or **aquatic animal production facility** which results in a **discharge** to **waters of the U.S.**? (FORM 2B)		X	
C. Is this a facility which currently results in **discharges** to **waters of the U.S.** other than those described in A or B above? (FORM 2C)	X		X
D. Is this a proposed facility *(other than those described in A or B above)* which will result in a **discharge** to **waters of the U.S.**? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of **hazardous wastes**? (FORM 3)		X	
F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X	
H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed **stationary source** which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	
J. Is this facility a proposed **stationary source** which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an **attainment area**? (FORM 5)		X	

III. NAME OF FACILITY

1 SKIP: DC Alabama, Inc.

IV. FACILITY CONTACT

A. NAME & TITLE *(last, first, & title)*	B. PHONE *(area code & no.)*
2 Shawonda Brockington	(334) 270-3609

V. FACILITY MAILING ADDRESS

A. STREET OR P.O. BOX: 3 1940 Ohio Ferro Road

B. CITY OR TOWN	C. STATE	D. ZIP CODE
4 Mount Meigs	AL	36057

VI. FACILITY LOCATION

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER: 5 1940 Ohio Ferro Road

B. COUNTY NAME: Montgomery County

C. CITY OR TOWN	D. STATE	E. ZIP CODE	F. COUNTY CODE *(if known)*
6 Mount Meigs	AL	36057	

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VII. SIC CODES *(4-digit, in order of priority)*

A. FIRST	B. SECOND
3313 *(specify)* Electrometallurgical Products, Except Steel	*(specify)*

C. THIRD	D. FOURTH
(specify)	*(specify)*

VIII. OPERATOR INFORMATION

A. NAME: DC Alabama, Inc.

B. Is the name listed in Item VIII-A also the owner? ☐ YES ☐ NO

C. STATUS OF OPERATOR *(Enter the appropriate letter into the answer box: if "Other," specify.)*

F = FEDERAL
S = STATE
P = PRIVATE
M = PUBLIC *(other than federal or state)*
O = OTHER *(specify)*

P *(specify)*

D. PHONE *(area code & no.)*: A (334) 270-3609

E. STREET OR P.O. BOX: 1940 Ohio Ferro Road

F. CITY OR TOWN: Mount Meigs

G. STATE: AL

H. ZIP CODE: 36057

IX. INDIAN LAND

Is the facility located on Indian lands? ☐ YES ☑ NO

X. EXISTING ENVIRONMENTAL PERMITS

A. NPDES *(Discharges to Surface Water)*	D. PSD *(Air Emissions from Proposed Sources)*
9 N AL0083763	9 P

B. UIC *(Underground Injection of Fluids)*	E. OTHER *(specify)*
9 U	9 209-0026 *(specify)* Major Source Operating Air Permit

C. RCRA *(Hazardous Wastes)*	E. OTHER *(specify)*
9 R	9 *(specify)*

XI. MAP

Attach to this application a topographic map of the area extending to at least one mile beyond property boundaries. The map must show the outline of the facility, the location of each of its existing and proposed intake and discharge structures, each of its hazardous waste treatment, storage, or disposal facilities, and each well where it injects fluids underground. Include all springs, rivers, and other surface water bodies in the map area. See instructions for precise requirements.

XII. NATURE OF BUSINESS *(provide a brief description)*

The facility produces silicon metal used in chemical and aluminum products. The facility also produces micro silica (fume), which is used as a strengthener and filler by the concrete and refractory industries. The manufacturing process includes melting raw materials (quartz rock, coal, charcoal, and wood chips) in an electric arc furnace to produce molten silicon metal, which is cast as ingots. The ingots are crushed before being packaged for shipping.

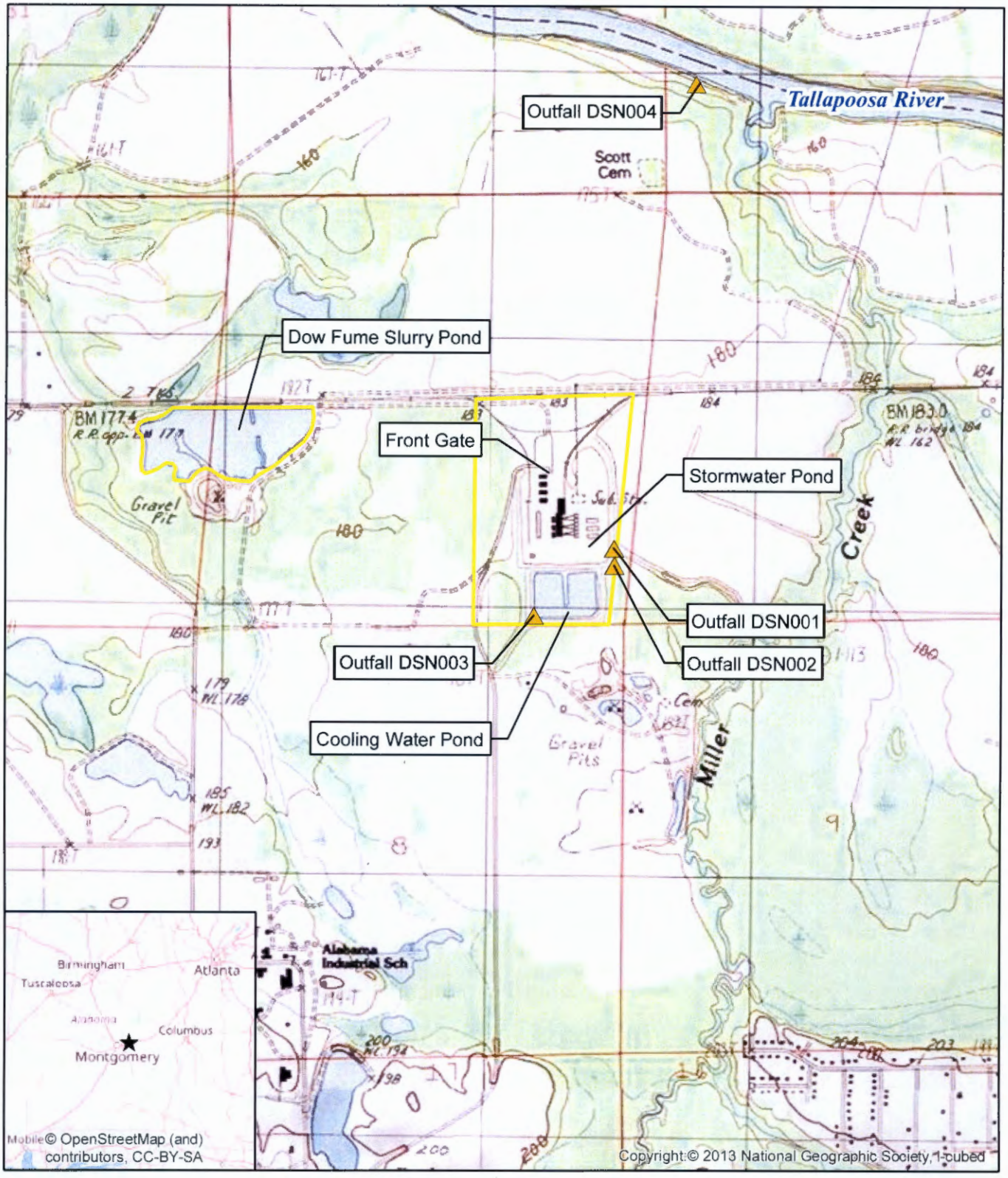
XIII. CERTIFICATION *(see instructions)*

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those persons immediately responsible for obtaining the information contained in the application, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME & OFFICIAL TITLE *(type or print)*	B. SIGNATURE	C. DATE SIGNED
Tim Dermon, Site Leader	Tim W. Dermon	5/6/2019

COMMENTS FOR OFFICIAL USE ONLY

C



Legend

- Property Boundary
- Outfall Location

N

0 1,000 2,000

Feet

Figure 1
Topographic Map
2019 Individual NPDES Permit Modification *DC Alabama, Inc. Facility*
Mt. Meigs, Alabama

JACOBS

Please print or type in the unshaded areas only.

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)

Form Approved.
OMB No. 2040-0086.
Approval expires 3-31-98.

FORM **2C** NPDES

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY
APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER
EXISTING MANUFACTURING, COMMERCIAL, MINING AND SILVICULTURE OPERATIONS
Consolidated Permits Program

I. OUTFALL LOCATION

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. OUTFALL NUMBER (*list*)	B. LATITUDE			C. LONGITUDE			D. RECEIVING WATER (*name*)
	1. DEG.	2. MIN.	3. SEC.	1. DEG.	2. MIN.	3. SEC.	
002	32.00	23.00	34.04	-86.00	4.00	11.63	Unnamed tributary to Miller Creek
004	32.00	24.00	33.14	-86.00	4.00	0.28	Tallapoosa River

II. FLOWS, SOURCES OF POLLUTION, AND TREATMENT TECHNOLOGIES

A. Attach a line drawing showing the water flow through the facility. Indicate sources of intake water, operations contributing wastewater to the effluent, and treatment units labeled to correspond to the more detailed descriptions in Item B. Construct a water balance on the line drawing by showing average flows between intakes, operations, treatment units, and outfalls. If a water balance cannot be determined (*e.g., for certain mining activities*), provide a pictorial description of the nature and amount of any sources of water and any collection or treatment measures.

B. For each outfall, provide a description of: (1) All operations contributing wastewater to the effluent, including process wastewater, sanitary wastewater, cooling water, and storm water runoff; (2) The average flow contributed by each operation; and (3) The treatment received by the wastewater. Continue on additional sheets if necessary.

1. OUTFALL NO. (*list*)	2. OPERATION(S) CONTRIBUTING FLOW		3. TREATMENT		
	a. OPERATION (*list*)	b. AVERAGE FLOW (*include units*)	a. DESCRIPTION	b. LIST CODES FROM TABLE 2C-1	
DSN002 /004	Silica fume from baghouse	0.2 MGD	Evaporation	1-F	
			Polymer flocculation	1-G	
			Discharge to surface water	4-A	
			Potential additional treatment		

OFFICIAL USE ONLY (*effluent guidelines sub-categories*)

CONTINUED FROM THE FRONT

C. Except for storm runoff, leaks, or spills, are any of the discharges described in Items II-A or B intermittent or seasonal?

☐ YES (*complete the following table*) ☑ NO (*go to Section III*)

1. OUTFALL NUMBER (*list*)	2. OPERATION(s) CONTRIBUTING FLOW (*list*)	3. FREQUENCY		4. FLOW				
		a. DAYS PER WEEK (*specify average*)	b. MONTHS PER YEAR (*specify average*)	a. FLOW RATE (*in mgd*)		B. TOTAL VOLUME (*specify with units*)		C. DURATION (*in days*)
				1. LONG TERM AVERAGE	2. MAXIMUM DAILY	1. LONG TERM AVERAGE	2. MAXIMUM DAILY	

III. PRODUCTION

A. Does an effluent guideline limitation promulgated by EPA under Section 304 of the Clean Water Act apply to your facility?

☐ YES (*complete Item III-B*) ☑ NO (*go to Section IV*)

B. Are the limitations in the applicable effluent guideline expressed in terms of production (*or other measure of operation*)?

☐ YES (*complete Item III-C*) ☑ NO (*go to Section IV*)

C. If you answered "yes" to Item III-B, list the quantity which represents an actual measurement of your level of production, expressed in the terms and units used in the applicable effluent guideline, and indicate the affected outfalls.

1. AVERAGE DAILY PRODUCTION			2. AFFECTED OUTFALLS (*list outfall numbers*)
a. QUANTITY PER DAY	b. UNITS OF MEASURE	c. OPERATION, PRODUCT, MATERIAL, ETC. (*specify*)	

IV. IMPROVEMENTS

A. Are you now required by any Federal, State or local authority to meet any implementation schedule for the construction, upgrading or operations of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

☑ YES (*complete the following table*) ☐ NO (*go to Item IV-B*)

1. IDENTIFICATION OF CONDITION, AGREEMENT, ETC.	2. AFFECTED OUTFALLS		3. BRIEF DESCRIPTION OF PROJECT	4. FINAL COMPLIANCE DATE	
	a. NO.	b. SOURCE OF DISCHARGE		a. REQUIRED	b. PROJECTED
Consent Order 19-007-CWP	001	Stormwater Runoff	Stormwater pond remediation - underway	10/25/2019	10/25/2019
	004	Slurry Pond and Stormwater	Slurry pond wastewater management - underway	10/25/2019	10/25/2019

B. OPTIONAL: You may attach additional sheets describing any additional water pollution control programs (*or other environmental projects which may affect your discharges*) you now have underway or which you plan. Indicate whether each program is now underway or planned, and indicate your actual or planned schedules for construction.

☐ MARK "X" IF DESCRIPTION OF ADDITIONAL CONTROL PROGRAMS IS ATTACHED

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)

CONTINUED FROM PAGE 2

V. INTAKE AND EFFLUENT CHARACTERISTICS

A, B, & C: See instructions before proceeding – Complete one set of tables for each outfall – Annotate the outfall number in the space provided. NOTE: Tables V-A, V-B, and V-C are included on separate sheets numbered V-1 through V-9.

D. Use the space below to list any of the pollutants listed in Table 2c-3 of the instructions, which you know or have reason to believe is discharged or may be discharged from any outfall. For every pollutant you list, briefly describe the reasons you believe it to be present and report any analytical data in your possession.

1. POLLUTANT	2. SOURCE	1. POLLUTANT	2. SOURCE

VI. POTENTIAL DISCHARGES NOT COVERED BY ANALYSIS

Is any pollutant listed in Item V-C a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ YES (*list all such pollutants below*) ☑ NO (*go to Item VI-B*)

CONTINUED FROM THE FRONT

VII. BIOLOGICAL TOXICITY TESTING DATA

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☑ YES (*identify the test(s) and describe their purposes below*) ☐ NO (*go to Section VIII*)

Aquatic Toxicity by Method 1000.0 - Ceriodaphnia dubia

Aquatic Toxicity by Method 1002.0 - Pimephales promelas

Biological toxicity testing data were collected on April 18, 2018 at the stormwater retention pond, which was discharging treated slurry water at the time through General NPDES Permit (ALG120051) Outfall 001. The sample analyzed produced a growth or reproduction inhibition in 25% of Pimephales promelas at an effluent concentration of 7.90%. For Ceriodaphnia dubia, less than 25% of the test organisms exhibit growth or reproduction inhibition at an effluent concentration of 100%.

VIII. CONTRACT ANALYSIS INFORMATION

Were any of the analyses reported in Item V performed by a contract laboratory or consulting firm?

☑ YES (*list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below*) ☐ NO (*go to Section IX*)

A. NAME	B. ADDRESS	C. TELEPHONE (*area code & no.*)	D. POLLUTANTS ANALYZED (*list*)
TestAmerica Laboratories, Inc. (TestAmerica Pensacola)	3355 McLemore Drive Pensacola, FL 32514	(850)474-1001	VOLATILE ORGANIC COMPOUNDS (GC-MS); SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS); DISSOLVED METALS (ICPMS); TOTAL METALS (ICPMS); DISSOLVED MERCURY (CVAA); TOTAL MERCURY; Oil and Grease; Total dissolved solids; Total suspended solids; Chemical oxygen demand; Phenols (total); Cyanide

IX. CERTIFICATION

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. NAME & OFFICIAL TITLE (*type or print*)	B. PHONE NO. (*area code & no.*)
Tim Dermon, Site Leader	(334) 270-3737
C. SIGNATURE	D. DATE SIGNED

PLEASE PRINT OR TYPE IN THE UNSHADED AREAS ONLY. You may report some or all of this information on separate sheets (*use the same format*) instead of completing these pages.
SEE INSTRUCTIONS.

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)

V. INTAKE AND EFFLUENT CHARACTERISTICS (*continued from page 3 of Form 2-C*)

OUTFALL NO.
DSN002 / DSN004

PART A –You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

1. POLLUTANT	2. EFFLUENT						3. UNITS (*specify if blank*)		4. INTAKE (*optional*)		
	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Biochemical Oxygen Demand (*BOD*)	10	16.7	N/A	N/A	N/A	N/A	est	mg/L	lb/day			
b. Chemical Oxygen Demand (*COD*)	87.0	145.1	N/A	N/A	23.6	39.4	10	mg/L	lb/day			
c. Total Organic Carbon (*TOC*)	5.0	8.3	N/A	N/A	4.9	8.1	2	mg/L	lb/day			
d. Total Suspended Solids (*TSS*)	260	434	N/A	N/A	49.5	82.6	10	mg/L	lb/day			
e. Ammonia (*as N*)	0	0	N/A	N/A	N/A	N/A	1	mg/L	lb/day			
f. Flow	VALUE 0.80		VALUE N/A		VALUE 0.20		est	MGD	MGD	VALUE		
g. Temperature (*winter*)	VALUE 22.7		VALUE N/A		VALUE 20.2		12	°C		VALUE		
h. Temperature (*summer*)	VALUE 22.7		VALUE N/A		VALUE 20.2		12	°C		VALUE		
i. pH	MINIMUM 7.4	MAXIMUM 8.2	MINIMUM N/A	MAXIMUM N/A			12	STANDARD UNITS				

PART B – Mark "X" in column 2-a for each pollutant you know or have reason to believe is present. Mark "X" in column 2-b for each pollutant you believe to be absent. If you mark column 2a for any pollutant which is limited either directly, or indirectly but expressly, in an effluent limitations guideline, you must provide the results of at least one analysis for that pollutant. For other pollutants for which you mark column 2a, you must provide quantitative data or an explanation of their presence in your discharge. Complete one table for each outfall. See the instructions for additional details and requirements.

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
a. Bromide (24959-67-9)		X												
b. Chlorine, Total Residual		X												
c. Color		X												
d. Fecal Coliform		X												
e. Fluoride (16984-48-8)		X												
f. Nitrate-Nitrite (*as N*)		X												

ITEM V-B CONTINUED FROM FRONT

1. POLLUTANT AND CAS NO. (*if available*)	2. MARK "X"		3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. BELIEVED PRESENT	b. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
			(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
g. Nitrogen, Total Organic (*as N*)		X												
h. Oil and Grease	X		2.2	3.7	N/A	N/A	1.0	1.7	10	mg/L	lb/d			
i. Phosphorus (as P), Total (7723-14-0)		X												
j. Radioactivity														
(1) Alpha, Total		X												
(2) Beta, Total		X												
(3) Radium, Total		X												
(4) Radium 226, Total		X												
k. Sulfate (*as SO_4*) (14808-79-8)		X												
l. Sulfide (*as S*)		X												
m. Sulfite (*as SO_3*) (14265-45-3)		X												
n. Surfactants		X												
o. Aluminum, Total (7429-90-5)	X		5.1	8.5	N/A	N/A	0.617	1.0	12	mg/L	lb/d			
p. Barium, Total (7440-39-3)		X												
q. Boron, Total (7440-42-8)		X												
r. Cobalt, Total (7440-48-4)		X												
s. Iron, Total (7439-89-6)		X												
t. Magnesium, Total (7439-95-4)		X												
u. Molybdenum, Total (7439-98-7)		X												
v. Manganese, Total (7439-96-5)		X												
w. Tin, Total (7440-31-5)		X												
x. Titanium, Total (7440-32-6)		X												

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
	DSN002 / DSN004

CONTINUED FROM PAGE 3 OF FORM 2-C

PART C - If you are a primary industry and this outfall contains process wastewater, refer to Table 2c-2 in the instructions to determine which of the GC/MS fractions you must test for. Mark "X" in column 2-a for all such GC/MS fractions that apply to your industry and for ALL toxic metals, cyanides, and total phenols. If you are not required to mark column 2-a (*secondary industries, nonprocess wastewater outfalls, and nonrequired GC/MS fractions*), mark "X" in column 2-b for each pollutant you know or have reason to believe is present. Mark "X" in column 2-c for each pollutant you believe is absent. If you mark column 2a for any pollutant, you must provide the results of at least one analysis for that pollutant. If you mark column 2b for any pollutant, you must provide the results of at least one analysis for that pollutant if you know or have reason to believe it will be discharged in concentrations of 10 ppb or greater. If you mark column 2b for acrolein, acrylonitrile, 2,4 dinitrophenol, or 2-methyl-4, 6 dinitrophenol, you must provide the results of at least one analysis for each of these pollutants which you know or have reason to believe that you discharge in concentrations of 100 ppb or greater. Otherwise, for pollutants for which you mark column 2b, you must either submit at least one analysis or briefly describe the reasons the pollutant is expected to be discharged. Note that there are 7 pages to this part; please review each carefully. Complete one table (*all 7 pages*) for each outfall. See instructions for additional details and requirements.

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
METALS, CYANIDE, AND TOTAL PHENOLS															
1M. Antimony, Total (7440-36-0)		X		0.0079	0.0132	N/A	N/A	0.0055	0.009	12	mg/L	lb/d			
2M. Arsenic, Total (7440-38-2)		X		0.087	0.145	N/A	N/A	0.0311	0.052	12	mg/L	lb/d			
3M. Beryllium, Total (7440-41-7)		X		0.004	0.007	N/A	N/A	0.00003	0.000	12	mg/L	lb/d			
4M. Cadmium, Total (7440-43-9)			X	0	0	N/A	N/A	0	0	12	mg/L	lb/d			
5M. Chromium, Total (7440-47-3)		X		0.0066	0.011	N/A	N/A	0.0007	0.001	12	mg/L	lb/d			
6M. Copper, Total (7440-50-8)		X		0.015	0.0250	N/A	N/A	0.0019	0.003	12	mg/L	lb/d			
7M. Lead, Total (7439-92-1)		X		0.0066	0.0110	N/A	N/A	0.00084	0.001	12	mg/L	lb/d			
8M. Mercury, Total (7439-97-6)			X	0	0	N/A	N/A	0	0	12	mg/L	lb/d			
9M. Nickel, Total (7440-02-0)		X		0.007	0.0117	N/A	N/A	0.0011	0.002	12	mg/L	lb/d			
10M. Selenium, Total (7782-49-2)		X		0.035	0.058	N/A	N/A	0.022	0.038	12	mg/L	lb/d			
11M. Silver, Total (7440-22-4)			X	0	0	N/A	N/A	0	0	12	mg/L	lb/d			
12M. Thallium, Total (7440-28-0)		X		0.00047	0.0008	N/A	N/A	0.00039	0.001	12	mg/L	lb/d			
13M. Zinc, Total (7440-66-6)		X		0.610	1.02	N/A	N/A	0.108	0.169	12	mg/L	lb/d			
14M. Cyanide, Total (57-12-5)			X	0	0	N/A	N/A	0	0	12	mg/L	lb/d			
15M. Phenols, Total		X		0.013	0.0217	N/A	N/A	0.0056	0.009	11	mg/L	lb/d			
DIOXIN															
2,3,7,8-Tetra-chlorodibenzo-P-Dioxin (1764-01-6)			X	DESCRIBE RESULTS											

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS															
1V. Accrolein (107-02-8)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
2V. Acrylonitrile (107-13-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
3V. Benzene (71-43-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
4V. Bis (*Chloromethyl*) Ether (542-88-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
5V. Bromoform (75-25-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
6V. Carbon Tetrachloride (56-23-5)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
7V. Chlorobenzene (108-90-7)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
8V. Chlorodibromomethane (124-48-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
9V. Chloroethane (75-00-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
10V. 2-Chloroethylvinyl Ether (110-75-8)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
11V. Chloroform (67-66-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
12V. Dichlorobromomethane (75-27-4)		X		0.00064	0.0011	N/A	N/A	0.0006	0.000	11	mg/L	lb/d			
13V. Dichlorodifluoromethane (75-71-8)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
14V. 1,1-Dichloroethane (75-34-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
15V. 1,2-Dichloroethane (107-06-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
16V. 1,1-Dichloroethylene (75-35-4)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
17V. 1,2-Dichloropropane (78-87-5)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
18V. 1,3-Dichloropropylene (542-75-6)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
19V. Ethylbenzene (100-41-4)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
20V. Methyl Bromide (74-83-9)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
21V. Methyl Chloride (74-87-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			

CONTINUE ON PAGE V-5

CONTINUED FROM PAGE V-4

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – VOLATILE COMPOUNDS (*continued*)															
22V. Methylene Chloride (75-09-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
23V. 1,1,2,2-Tetrachloroethane (79-34-5)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
24V. Tetrachloro-ethylene (127-18-4)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
25V. Toluene (108-88-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
26V. 1,2-Trans-Dichloroethylene (156-60-5)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
27V. 1,1,1-Trichloro-ethane (71-55-6)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
28V. 1,1,2-Trichloro-ethane (79-00-5)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
29V Trichloro-ethylene (79-01-6)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
30V. Trichloro-fluoromethane (75-69-4)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
31V. Vinyl Chloride (75-01-4)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
GC/MS FRACTION – ACID COMPOUNDS															
1A. 2-Chlorophenol (95-57-8)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
2A. 2,4-Dichloro-phenol (120-83-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
3A. 2,4-Dimethyl-phenol (105-67-9)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
4A. 4,6-Dinitro-O-Cresol (534-52-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
5A. 2,4-Dinitro-phenol (51-28-5)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
6A. 2-Nitrophenol (88-75-5)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
7A. 4-Nitrophenol (100-02-7)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
8A. P-Chloro-M-Cresol (59-50-7)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
9A. Pentachloro-phenol (87-86-5)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
10A. Phenol (108-95-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
11A. 2,4,6-Trichloro-phenol (88-05-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS															
1B. Acenaphthene (83-32-9)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
2B. Acenaphtylene (208-96-8)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
3B. Anthracene (120-12-7)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
4B. Benzidine (92-87-5)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
5B. Benzo (*a*) Anthracene (56-55-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
6B. Benzo (*a*) Pyrene (50-32-8)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
7B. 3,4-Benzo-fluoranthene (205-99-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
8B. Benzo (*ghi*) Perylene (191-24-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
9B. Benzo (*k*) Fluoranthene (207-08-9)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
10B. Bis (*2-Chloro-ethoxy*) Methane (111-91-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
11B. Bis (*2-Chloro-ethyl*) Ether (111-44-4)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
12B. Bis (*2-Chloroisopropyl*) Ether (102-80-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
13B. Bis (*2-Ethyl-hexyl*) Phthalate (117-81-7)		X		0.0011	0.0183	N/A	N/A	0.0019	0.003	11	mg/L	lb/d			
14B. 4-Bromophenyl Phenyl Ether (101-55-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
15B. Butyl Benzyl Phthalate (85-68-7)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
16B. 2-Chloro-naphthalene (91-58-7)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
17B. 4-Chloro-phenyl Phenyl Ether (7005-72-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
18B. Chrysene (218-01-9)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
19B. Dibenzo (*a,h*) Anthracene (53-70-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
20B. 1,2-Dichloro-benzene (95-50-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
21B. 1,3-Di-chloro-benzene (541-73-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			

CONTINUED FROM PAGE V-6

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCEN-TRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
22B. 1,4-Dichloro-benzene (106-46-7)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
23B. 3,3-Dichloro-benzidine (91-94-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
24B. Diethyl Phthalate (84-66-2)		X		0.00046	0.0008	N/A	N/A	0.000008	0.000	11	mg/L	lb/d			
25B. Dimethyl Phthalate (131 -11-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
26B. Di-N-Butyl Phthalate (84-74-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
27B. 2,4-Dinitro-toluene (121-14-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
28B. 2,6-Dinitro-toluene (606-20-2)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
29B. Di-N-Octyl Phthalate (117-84-0)		X		0.0047	0.0078	N/A	N/A	0.00085	0.001	11	mg/L	lb/d			
30B. 1,2-Diphenyl-hydrazine (*as Azo-benzene*) (122-66-7)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
31B. Fluoranthene (206-44-0)		X		0.00046	0.0008	N/A	N/A	0.00004	0.000	11	mg/L	lb/d			
32B. Fluorene (86-73-7)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
33B. Hexachloro-benzene (118-74-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
34B. Hexachloro-butadiene (87-68-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
35B. Hexachloro-cyclopentadiene (77-47-4)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
36B Hexachloro-ethane (67-72-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
37B. Indeno (1,2,3-*cd*) Pyrene (193-39-5)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
38B. Isophorone (78-59-1)		X		0.0027	0.0045	N/A	N/A	0.0002	0.000	11	mg/L	lb/d			
39B. Naphthalene (91-20-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
40B. Nitrobenzene (98-95-3)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
41B. N-Nitro-sodimethylamine (62-75-9)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
42B. N-Nitrosodi-N-Propylamine (621-64-7)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			

CONTINUED FROM THE FRONT

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – BASE/NEUTRAL COMPOUNDS (*continued*)															
43B. N-Nitrosodiphenylamine (86-30-6)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
44B. Phenanthrene (85-01-8)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
45B. Pyrene (129-00-0)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
46B. 1,2,4-Trichlorobenzene (120-82-1)			X	0	0	N/A	N/A	0	0	11	mg/L	lb/d			
GC/MS FRACTION – PESTICIDES															
1P. Aldrin (309-00-2)			X												
2P. α-BHC (319-84-6)			X												
3P. β-BHC (319-85-7)			X												
4P. γ-BHC (58-89-9)			X												
5P. δ-BHC (319-86-8)			X												
6P. Chlordane (57-74-9)			X												
7P. 4,4'-DDT (50-29-3)			X												
8P. 4,4'-DDE (72-55-9)			X												
9P. 4,4'-DDD (72-54-8)			X												
10P. Dieldrin (60-57-1)			X												
11P. α-Enosulfan (115-29-7)			X												
12P. β-Endosulfan (115-29-7)			X												
13P. Endosulfan Sulfate (1031-07-8)			X												
14P. Endrin (72-20-8)			X												
15P. Endrin Aldehyde (7421-93-4)			X												
16P. Heptachlor (76-44-8)			X												

EPA I.D. NUMBER (*copy from Item 1 of Form 1*)	OUTFALL NUMBER
	DSN002 / DSN004

CONTINUED FROM PAGE V-8

1. POLLUTANT AND CAS NUMBER (*if available*)	2. MARK "X"			3. EFFLUENT							4. UNITS		5. INTAKE (*optional*)		
	a. TESTING REQUIRED	b. BELIEVED PRESENT	c. BELIEVED ABSENT	a. MAXIMUM DAILY VALUE		b. MAXIMUM 30 DAY VALUE (*if available*)		c. LONG TERM AVRG. VALUE (*if available*)		d. NO. OF ANALYSES	a. CONCENTRATION	b. MASS	a. LONG TERM AVERAGE VALUE		b. NO. OF ANALYSES
				(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS	(1) CONCENTRATION	(2) MASS				(1) CONCENTRATION	(2) MASS	
GC/MS FRACTION – PESTICIDES (*continued*)															
17P. Heptachlor Epoxide (1024-57-3)			X												
18P. PCB-1242 (53469-21-9)			X												
19P. PCB-1254 (11097-69-1)			X												
20P. PCB-1221 (11104-28-2)			X												
21P. PCB-1232 (11141-16-5)			X												
22P. PCB-1248 (12672-29-6)			X												
23P. PCB-1260 (11096-82-5)			X												
24P. PCB-1016 (12674-11-2)			X												
25P. Toxaphene (8001-35-2)			X												

Please print or type in the unshaded areas only.

EPA ID Number (*copy from Item 1 of Form 1*)

Form Approved. OMB No. 2040-0086
Approval expires 5-31-92

FORM 2F NPDES

U.S. Environmental Protection Agency
Washington, DC 20460

Application for Permit to Discharge Storm Water Discharges Associated with Industrial Activity

Paperwork Reduction Act Notice

Public reporting burden for this application is estimated to average 28.6 hours per application, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate, any other aspect of this collection of information, or suggestions for improving this form, including suggestions which may increase or reduce this burden to: Chief, Information Policy Branch, PM-223, U.S. Environmental Protection Agency, 1200 Pennsylvania Avenue, NW, Washington, DC 20460, or Director, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.

I. Outfall Location

For each outfall, list the latitude and longitude of its location to the nearest 15 seconds and the name of the receiving water.

A. Outfall Number (*list*)	B. Latitude			C. Longitude			D. Receiving Water (*name*)
DSN001	32.00	23.00	34.01	-86.00	4.00	11.64	Unnamed Tributary to Miller Creek
DSN004	32.00	24.00	35.21	-86.00	4.00	0.40	Tallapoosa River

II. Improvements

A. Are you now required by any Federal, State, or local authority to meet any implementation schedule for the construction, upgrading or operation of wastewater treatment equipment or practices or any other environmental programs which may affect the discharges described in this application? This includes, but is not limited to, permit conditions, administrative or enforcement orders, enforcement compliance schedule letters, stipulations, court orders, and grant or loan conditions.

1. Identification of Conditions, Agreements, Etc.	2. Affected Outfalls		3. Brief Description of Project	4. Final Compliance Date	
	number	source of discharge		a. req.	b. proj.
Consent Order 19-007-CWP	001	Stormwater	Revised Stormwater Remediation Plan		10/25/19
	004	Process and Stormwater	Wastewater Management Engineering Report	10/25/19	10/25/19

B: You may attach additional sheets describing any additional water pollution (or other environmental projects which may affect your discharges) you now have under way or which you plan. Indicate whether each program is now under way or planned, and indicate your actual or planned schedules for construction.

III. Site Drainage Map

Attach a site map showing topography (or indicating the outline of drainage areas served by the outfalls(s) covered in the application if a topographic map is unavailable) depicting the facility including: each of its intake and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each known past or present areas used for outdoor storage of disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied; each of its hazardous waste treatment, storage or disposal units (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which received storm water discharges from the facility.

Continued from the Front

IV. Narrative Description of Pollutant Sources

A. For each outfall, provide an estimate of the area (include units) of impervious surfaces (including paved areas and building roofs) drained to the outfall, and an estimate of the total surface area drained by the outfall.

Outfall Number	Area of Impervious Surface *(provide units)*	Total Area Drained *(provide units)*	Outfall Number	Area of Impervious Surface *(provide units)*	Total Area Drained *(provide units)*
DSN001 DSN004	<1 acres 4.8 acres	46 acres 10 acres			

B. Provide a narrative description of significant materials that are currently or in the past three years have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage, or disposal; past and present materials management practices employed to minimize contact by these materials with storm water runoff; materials loading and access areas, and the location, manner, and frequency in which pesticides, herbicides, soil conditioners, and fertilizers are applied.

Please refer to Form 2F Supplemental Information for a description of significant materials.

C. For each outfall, provide the location and a description of existing structural and nonstructural control measures to reduce pollutants in storm water runoff; and a description of the treatment the storm water receives, including the schedule and type of maintenance for control and treatment measures and the ultimate disposal of any solid or fluid wastes other than by discharge.

Outfall Number	Treatment	List Codes from Table 2F-1
DSN001 DSN004	Please refer to Form 2F Supplemental Information for description of existing structural and nonstructural control measures, and storm water treatment.	1-U sedimentation 4-A discharge to surface water

V. Nonstormwater Discharges

A. I certify under penalty of law hat the outfall(s) covered by this application have been tested or evaluated for the presence of nonstormwater discharges, and that all nonstormwater discharged from these outfall(s) are identified in either an accompanying Form 2C or From 2E application for the outfall.

Name and Official Title *(type or print)*	Signature	Date Signed
Tim Dermon, Site Leader		

B. Provide a description of the method used, the date of any testing, and the onsite drainage points that were directly observed during a test.

Wet and dry weather visual inspections are conducted twice per week per the facility best management practices plan.

VI. Significant Leaks or Spills

Provide existing information regarding the history of significant leaks or spills of toxic or hazardous pollutants at the facility in the last three years, including the approximate date and location of the spill or leak, and the type and amount of material released.

There have been no leaks or spills of toxic or hazardous pollutants at the facility in the last three years in reportable quantities.

Continued from Page 2

EPA ID Number *(copy from Item 1 of Form 1)*

VII. Discharge Information

A, B, C, & D: See instructions before proceeding. Complete one set of tables for each outfall. Annotate the outfall number in the space provided. Table VII-A, VII-B, VII-C are included on separate sheets numbers VII-1 and VII-2.

E. Potential discharges not covered by analysis – is any toxic pollutant listed in table 2F-2, 2F-3, or 2F-4, a substance or a component of a substance which you currently use or manufacture as an intermediate or final product or byproduct?

☐ Yes (*list all such pollutants below*) ☑ No (*go to Section IX*)

VIII. Biological Toxicity Testing Data

Do you have any knowledge or reason to believe that any biological test for acute or chronic toxicity has been made on any of your discharges or on a receiving water in relation to your discharge within the last 3 years?

☑ Yes (*list all such pollutants below*) ☐ No (*go to Section IX*)

Biological toxicity testing was conducted on proposed Outfall 004 discharges (process wastewater). Please refer to Form 2C for a discussion of biological toxicity testing results for proposed Outfall DSN002/004.
IX. Contract Analysis Information

IX. Contract Analysis Information

Were any of the analyses reported in Item VII performed by a contract laboratory or consulting firm?

☑ Yes (*list the name, address, and telephone number of, and pollutants analyzed by, each such laboratory or firm below*) ☐ No (*go to Section X*)

A. Name	B. Address	C. Area Code & Phone No.	D. Pollutants Analyzed
TestAmerica Laboratories, Inc. (TestAmerica Pensacola)	3355 McLemore Drive Pensacola, FL 32514	(850)474-1001	BTEX; Naphthalene; Total metals (ICPMS); Oil and Grease; Total dissolved solids; Total suspended solids; Biological oxygen demand; Chemical oxygen demand; Total nitrogen; Total phosphorous; Phenols (total);Cyanide; Chloride; Nitrate; Total Organic Carbon Nitrogen, Kjeldahl

X. Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

A. Name & Official Title (*Type Or Print*)	B. Area Code and Phone No.
Tim Dermon, Site Leader	(334) 270-3737
C. Signature	D. Date Signed
Tim W. Dermon	5/6/2019

EPA ID Number (*copy from Item 1 of Form 1*)

Form Approved. OMB No. 2040-0086
Approval expires 5-31-92

VII. Discharge information *(Continued from page 3 of Form 2F)*

Part A – You must provide the results of at least one analysis for every pollutant in this table. Complete one table for each outfall. See instructions for additional details.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Oil and Grease	1.9 mg/L	N/A	N/A	N/A	1.00	Stormwater Runoff
Biological Oxygen Demand (BOD5)	3.3 mg/L	3.8 mg/L	N/A	N/A	1.00	Stormwater Runoff
Chemical Oxygen Demand (COD)	48 mg/L	45 mg/L	N/A	N/A	1.00	Stormwater Runoff
Total Suspended Solids (TSS)	200 mg/L	150 mg/L	N/A	N/A	1.00	Stormwater Runoff
Total Nitrogen	1.1 mg/L	2.2 mg/L	N/A	N/A	1.00	Stormwater Runoff
Total Phosphorus	0.30 mg/L	0.24 mg/L	N/A	N/A	1.00	Stormwater Runoff
pH	Minimum 8.05	Maximum 8.05	Minimum	Maximum	1.00	Stormwater Runoff

Part B – List each pollutant that is limited in an effluent guideline which the facility is subject to or any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit). Complete one table for each outfall. See the instructions for additional details and requirements.

Pollutant and CAS Number *(if available)*	Maximum Values *(include units)*		Average Values *(include units)*		Number of Storm Events Sampled	Sources of Pollutants
	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite	Grab Sample Taken During First 20 Minutes	Flow-Weighted Composite		
Not Applicable						

Form 2F Supplemental Information

Stormwater Drainage and Management (Form 2F – Sections IV.A, B and C)

The DCA facility maintains detailed programs to manage stormwater within the developed areas of the site, including the following:

- Stormwater Best Management Practices Plan (BMPP)
- Individual operating area procedures

Structural Control Measures

Structural controls at the DCA facility include a stormwater retention pond, an oil/water separator for stormwater in the fuel and oil storage area, sloped containment area for loading and unloading operations that drains to the oil/water separator, and covered areas for railcar loading/unloading (Figure 2). Stormwater runoff from the facility is also controlled by curbing, graded land surfaces, culverts, and drains that direct water to the stormwater retention pond (Figure 2). The runoff system prevents significant ponding of water on site and prevents erosion of downgradient areas. As such, stormwater runoff control structures at the facility are designed and maintained to prevent or minimize the release of contaminants that may result from facility operations.

There is minimal risk of stormwater being exposed to pollutant sources because most material storage, loading, and unloading occur inside buildings or under a covered structure. Secondary containment at material storage locations includes spill containment pallets for drums and containers. The facility stores diesel outdoors in double-walled, aboveground storage tanks that also have secondary containment.

Surface cover and natural ground cover prevent soil erosion at the facility. Surface cover in the process areas of the facility consists mostly of concrete, asphalt, and gravel. Vegetative cover at the facility is well established and is routinely maintained.

Nonstructural Control Measures

The following best management practices (BMPs) are used to implement stormwater measures and controls:

- Good housekeeping practices
- Routine preventive maintenance
- Routine visual inspections
- Spill Prevention, Control, and Countermeasure
- Stormwater BMPP
- Employee training
- Recordkeeping and reporting

Stormwater Drainage

The DCA facility maintains detailed programs to manage stormwater within the developed areas of the site, including:

- Stormwater BMPP
- Individual operating area procedures

The drainage network on the site consists of a system of ditches that collects surface water runoff. Runoff from the facility's manufacturing process area flows into the facility's stormwater retention pond and discharges through Outfall DSN001 (Figure 3) to an unnamed tributary of Miller Creek. A new stormwater retention / equalization basin and stormwater treatment system will be constructed to replace the existing retention basin and will discharge stormwater (up to a 25-year, 24-hour event) through Outfall DSN004 to the Tallapoosa River. Some stormwater falls on the western and northern end (non-process area) of the facility, which sheet-flows into two separate drainage ditches before leaving the facility via Outfall DSN001.

The DCA property encompasses approximately 162 acres. The facility stormwater drainage area measures approximately 42 acres, with approximately 31 of those acres having some impervious surfaces.

Narrative Description of Pollutant Sources – Potential Exposure to Stormwater (Form 2F – Section IV.B)

DCA has implemented BMPs to prevent stormwater contamination at the Mt. Meigs facility. BMPs are presented in the facility Stormwater BMPP. Significant materials stored at the facility include new and used equipment wash solvents, new and used motor oil (tanks), diesel fuel (tanks), hydraulic fluid (drums), transmission fluid (drums), and mineral oil/Quintolubric 888-68 (drums). Wastes stored at the facility include used motor oil, used hydraulic fluid, used transmission fluid, and used mineral oil/Quintolubric 888-68, which are stored in drums. Also, a small amount universal waste, miscellaneous waste, silica fume waste, and general (household) waste are stored at the facility. Used motor oil, fluids, mineral oil, and solvents are removed by licensed waste disposal contractors. Most significant materials are stored under roof to minimize contact with stormwater. New and used oils and hydrocarbon fluids are maintained in accordance with the facility's Spill Prevention, Control, and Countermeasure plan.

Garbage dumpsters and garbage cans are located throughout the facility. The dumpsters and garbage cans may contain garbage and other refuse that produces pollutants if exposed to stormwater. Good housekeeping procedures are implemented to reduce the potential of stormwater pollution.

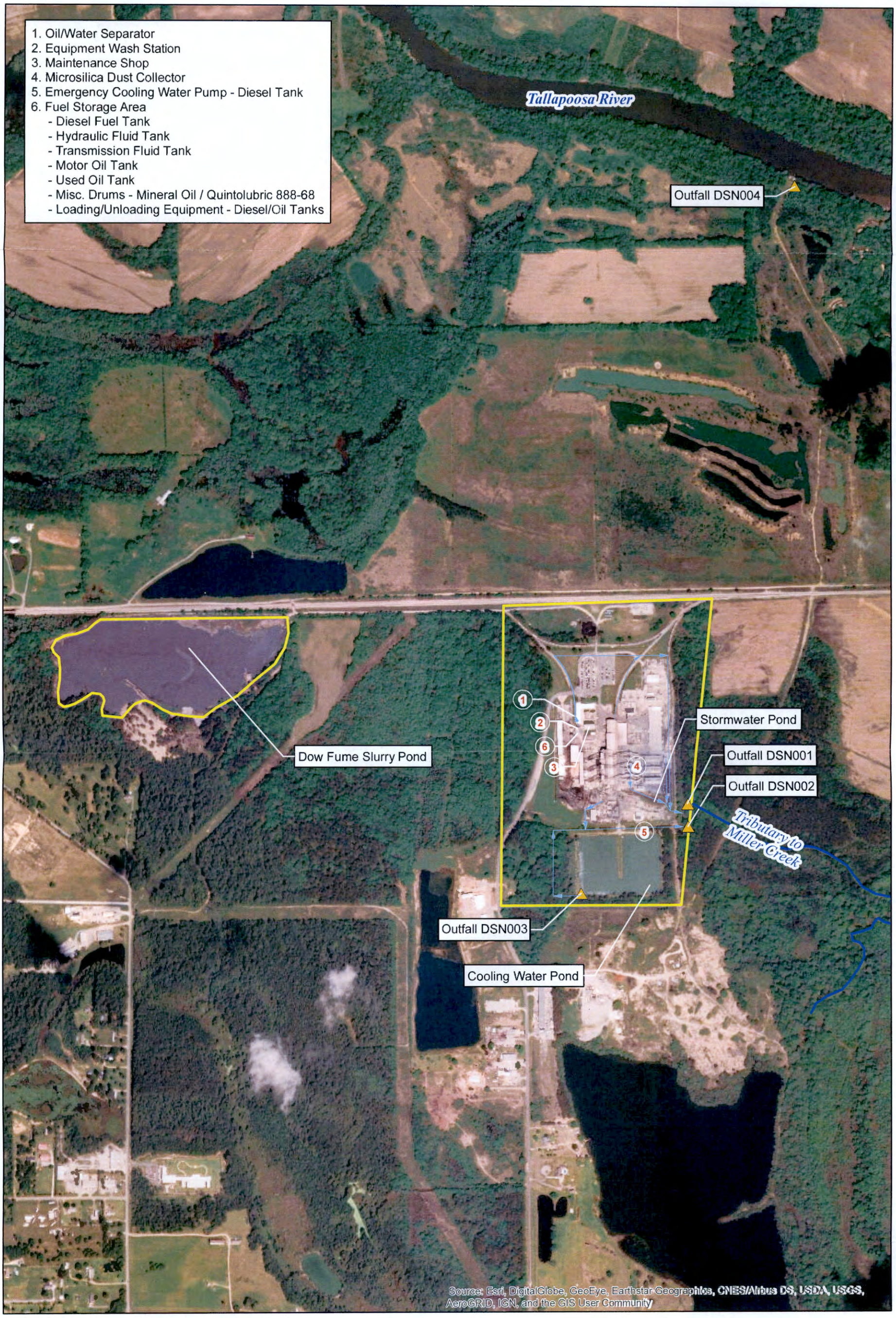
There are no hazardous wastes generated, stored, or disposed of at the Mt. Meigs facility.

Herbicides and Pesticides (Form 2F – Section IV.B)

DCA contracts licensed applicators of conventional herbicides and pesticides at specific intervals for site maintenance and landscaping at the Mt. Meigs facility.

Herbicides are applied throughout site operational areas, as needed, and only in minimal amounts required to control weeds within the operational areas, roadways, and ditches. Only commercially available products are used and applied in a manner and at rates consistent with the registered usages for the specific herbicide selected, as required by the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

Pesticides are applied as needed for routine pest control. Only commercially available products are used and applied in a manner and at rates consistent with the registered usages for the specific pesticides selected, as required by FIFRA.



Legend

- Property Boundary
- Outfall Location
- Stormwater Flow Path

N

0 500 1,000
Feet

Figure 3
Site Drainage Map
2019 Individual NPDES Permit Modification
DC Alabama, Inc. Facility
Mt. Meigs, Alabama

JACOBS

Jackson, Scott A

Subject: RE: Updated Antidegradation Analysis for DC Alabama Permit Modification

From: Sisk, Lynn/MGM <Lynn.Sisk@jacobs.com>
Sent: Thursday, June 13, 2019 5:46 PM
To: Jackson, Scott A <scott.jackson@adem.alabama.gov>
Cc: Brockington, Shawonda (S) <SBrockington@dow.com>; Martin, J.P./MGM <J.P.Martin@jacobs.com>; Powers, Martin/SEA <Martin.Powers@jacobs.com>
Subject: Updated Antidegradation Analysis for DC Alabama Permit Modification

Scott,
I have attached a revised antidegradation analysis for the DC Alabama NPDES permit modification request. Let me know if you have questions or need additional information.

Thanks.

Lynn Sisk, P.E.
Jacobs
Technologist | BIAF
334.215.9060
334.467.6284 mobile
334.273.7504 fax
Lynn.Sisk@jacobs.com

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JACOBS

Technical Memorandum

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Subject	**Antidegradation Evaluation for DC Alabama, Inc., Mt. Meigs, Alabama**
To	DC Alabama, Inc. (DC Alabama)
From	Lynn Sisk/Jacobs Engineering Group (Jacobs)
Date	June 14, 2019
Copies To	J.P. Martin/Jacobs Martin Powers/Jacobs Shawonda Brockington/DC Alabama
Project No:	DWMTM005

Purpose

The purpose of this Technical Memorandum (TM) is to fulfill the requirements of the Alabama Department of Environmental Management (ADEM) Administrative Code Rule 335-6-10, Water Quality Criteria, requiring the completion of an antidegradation evaluation for DC Alabama, Inc (DCA) for the modification of National Pollutant Discharge Elimination System (NPDES) Permit AL0083763. This evaluation is related to the proposed discharge of treated process wastewater and stormwater.

DC Alabama Facility Summary

The DCA facility is located at 1940 Ohio Ferro Road in Mt. Meigs, Montgomery County, Alabama. The facility's standard industrial classification code is 3313. The facility produces silicon metal used in chemical and aluminum products. The facility also produces silica fume, which is used as a strengthener and filler by the concrete and refractory industries. The manufacturing process includes melting raw materials (silica rock, coal, charcoal, and wood chips) in an electric arc furnace to produce molten silicon metal which is cast as ingots. The ingots are crushed before being packaged for shipping. Silica fume captured by the facility's air pollution control equipment have historically been conveyed through a recirculated water stream and placed in a silica fume slurry pond. However, DCA has modified its silica fume handling procedures so that the material is no longer being sent to the slurry pond. DCA is constructing a water treatment system to treat the water in the slurry pond and discharge it through Outfall DSN004 until the slurry pond is completely dewatered. In addition, a new stormwater sedimentation basin and treatment system is being constructed to treat stormwater runoff from the manufacturing process area of the facility. The stormwater sedimentation basin will discharge through Outfall DSN004 for 24-hour storm events with a return frequency up to 100 years. An emergency spillway in the sedimentation basin will discharge to the unnamed tributary to Miller Creek during 24-hour storm events with a return frequency of greater than 100 years. This updated antidegradation analysis reflects the new discharge of treated stormwater at Outfall DSN004 as described in the NPDES permit modification application submitted to ADEM on April 26, 2019.

Economic and Social Development

The following section responds to the question in Section 335-6-10-.12 related to economic and social development.

1) What environmental or public health problem will the discharger be correcting?
   - This discharge will prevent inadvertent overflow of water outside of the slurry pond and reduce the discharge of stormwater from the manufacturing area to the unnamed tributary to Miller Creek.
2) How much will the discharger be increasing employment (at its existing facility or as the result of locating a new facility)?
   - During the duration of the project implementation, DCA anticipates that approximately 25 contractors will be employed, depending on the phase of the project, to assist with engineering, operation, and other project work.
3) How much reduction in employment will the discharge be avoiding?
   - The site currently employs approximately 200 Dow and contract employees. There is no anticipated reduction in employment.
4) How much additional state or local taxes will the discharger be paying?
   - The new treatment process and discharge would create an estimated $30,000 in local and state taxes.
   - There will also be an increase in local and state taxes generated from spending on machinery and equipment and construction wages.
5) What public service to the community will the discharger be providing?
   - DCA will continue to provide job training for employees which contributes to a skilled workforce.
   - DCA is committed to supporting the communities in which their facilities operate. DCA employees support the local community through various service activities.
6) What economic or social benefit will the discharger be providing to the community?
   - Though not possible to estimate at this time, there will be an economic benefit experienced through the treatment and discharge of the slurry pond water and stormwater because of spending on machinery and equipment, construction activities, and construction wages. This work will create spending in the local area and will increase tax revenue for both the local and state economy.

Outfalls and Discharged Water Overview

Proposed outfall discharges are described below:

DSN002/004

- This is the proposed process wastewater outfall location for the discharge of treated slurry pond water to prevent pond overflow and provide for pond dewatering during the pond closure process. The effluent would be discharged to the Tallapoosa River or to an unnamed tributary to Miller Creek. Outfall DSN004 will also discharge treated stormwater runoff from the facility's stormwater sedimentation basin.

Discharge Alternative Evaluation

This discharge alternative evaluation compares the technical aspects and the costs of the potential discharge alternatives of the treated process waters from DCA's site. The same alternatives would apply whether discharge is to the Tallapoosa River or the unnamed tributary to Miller Creek. Alternates required by Chapter 335-6-10 along with potential other disposal alternatives are detailed in following sections.

Alternative 1: Land Application

- Land application is not technically feasible. The total potential volume of water requiring disposal would require an application site larger than is readily available to the facility.
- Based on soil survey reports, the soil at and near the facility location has limited water absorption qualities making land application infeasible (https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx).
- Review of data from other sites in proximity to the DCA property indicates groundwater is very shallow at the site (i.e., generally less than 10 feet). ADEM requirements typically prohibit land application of industrial wastewater at such sites.

Alternative 2: Pretreatment/Discharge to Publicly Owned Treatment Works (POTW)

- The Montgomery Water Works and Sanitary Sewer Board (MWWSSB) has a small treatment plant located near the plant site. The plant is currently very underloaded as it is in an area of the City that has not been developed. Thus, there is little sanitary treatment flow and DCA wastewater, which is very low in biochemical oxygen demand and organics, likely would not be treatable in the lightly loaded treatment plant.
- Discharging to a larger POTW, such as the MWWSSB Econchate Wastewater Treatment Facility was determined to be infeasible due to the cost of pumping and/or trucking the slurry pond water from the DCA facility to the nearest MWWSSB pump station. A more complete analysis of this alternative is attached.

Alternative 3: Relocation of Discharge

- This alternative is not a relevant option as this is a new discharge.

Alternative 4: Reuse/Recycling

- The slurry pond water does not have a purpose to be reused and therefore must be discharged to prevent overflow of the slurry pond.

Alternative 5: Process/Treatment Alternatives

- DCA has determined that long-term management of silica fume will not include the use of the slurry pond for silica fume storage. As such, DCA has committed to close the slurry pond and convert a portion of the area to a constructed wetland system for long-term treatment of process stormwater. However, there is no process alternative that will allow for the complete dewatering of the pond.

Alternative 6: Subsurface disposal

- The groundwater table at the site is very shallow, and the slurry pond water and process stormwater contain metals concentrations which make this alternative economically and environmentally infeasible. To provide protection of the groundwater that serves multiple uses for areas surrounding DCA, an advanced water treatment system would be required to meet the water quality limits for the injection system.

Alternative 7: Treatment and Discharge to the Tallapoosa River or Unnamed Tributary to Miller Creek

- Treatment of the slurry pond water and process stormwater will include polymer flocculation and advanced solids capture technology to meet the surface water discharge limits. This is the most economically feasible alternative. This is also the most efficient alternative to ensure compliance with environmental regulations. This is the viable alternative available for the discharge of the treated slurry pond water and process stormwater to surface water. With proper operation of the treatment process equipment, monitoring of the outfalls, and source discharge control, water quality will be protected. Upon detailed design, should an alternative solution with a better economic and environmental profile be developed, then that option would be pursued. Upon completion of the slurry pond closure and construction of the wetlands treatment system, all discharges through Outfall DSN004 to the Tallapoosa River will be terminated.

Of the alternatives that were evaluated, a discharge to nearby surface waters is the only alternative that is technically and economically feasible.

ALTERNATIVE ANALYSIS

Applicant/Project: DC Alabama, Inc.

All new or expanded discharges (except discharges eligible for coverage under general permits) covered by the NPDES permitting program are subject to the provisions of the antidegradation policy. Applicants for such discharges to Tier 2 waters are required to demonstrate "... that the proposed discharge is necessary for important economic or social development." As a part of this demonstration, the applicant must complete an evaluation of the discharge alternatives listed below, to include calculation of total annualized project costs for each technically feasible alternative using the attached worksheets (Worksheet B for public-sector projects and Worksheet R for private-sector projects). Alternatives with total annualized project costs that are less than 110% of the total annualized project costs for the Tier 2 discharge proposal are considered viable alternatives.

Alternative	Viable	Non-Viable	Comment
1. Land Application		X	Shallow groundwater at the site and metals concentrations in the wastewater prohibit this disposal option.
2. Pretreatment/Discharge to POTW		X	Current POTW technology does not support the chemical profile of the water that needs to be treated.
3. Relocation of Discharge		X	Not applicable. This is a new discharge.
4. Reuse / Recycle		X	Silica fume is no longer being sent to the slurry pond.
5. Process/Treatment Alternatives		X	Full evaporation of accumulated water is not feasible. Pond closure requires complete dewatering of the pond.
6. On Site/Subsurface, combination of above or other disposal alternatives.		X	Shallow groundwater at the site and metals concentrations in the wastewater prohibit this disposal option.
7. NPDES Discharge to surface water	X		This is the viable alternative to discharge the treated process wastewater. With proper operation of the treatment equipment, monitoring of the outfalls, and source discharge control, water quality will be protected.

Pursuant to ADEM Administrative Code Rule 335-6-3-.04, I certify on behalf of the applicant that I have completed an evaluation of the discharge alternatives identified above, and reached the conclusions indicated.

Signature: _____
(Professional Engineer)

Date: 6/13/2019

(Supporting documentation to be attached, referenced, or otherwise handled as appropriate.) See Attachments.

WORKSHEET R

Calculation of Total Annualized Project Costs for Private-Sector Projects DCA Mt. Meigs, Alabama

Capital Cost to be Financed (*Supplied by Applicant)*	NA	(1)
Interest Rate for Financing (expressed as decimal)	NA	(i)
Time Period of Financing (in years)	NA	(n)
Annualization Factor = $\frac{i}{(1+i)^n - 1}$ + i	NA	(2)
Annualized Capital Cost [Calculate: (1) x (2)]	NA	(3)
Annual Costs of Operation and Maintenance (including but not limited to: monitoring, inspection, permitting fees, waste disposal charges, repair, administration and replacement.)	$225,000	(4)
Total Annual Cost of Pollution Control Project [(3) + (4)]	$225,000	(5)

FOR DEPARTMENT USE ONLY

DOCUMENTATION OF ANTIDEGRADATION REVIEW

Applicant/Project: _____

Alabama's antidegradation policy is found in rule 335-6-10-.04 of the ADEM Administrative code, and addresses three categories of waters/uses:

- high quality waters that constitute an outstanding national resource (Tier 3),
- waters where the quality exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water (Tier 2), and
- existing instream water uses and the level of water quality necessary to protect the existing uses (Tier 1).

All new or expanded discharges (except discharges eligible for coverage under general permits) covered by the NPDES permitting program are subject to the provisions of the antidegradation policy. Applicants for such discharges to Tier 2 waters are required to demonstrate " . . . that the proposed discharge is necessary for important economic or social development" as a part of the permit application process.

Consideration of Tier 2 provisions is documented below (this completed form will be placed in the permit file):

1. Is the application for a new or expanded discharge?_____Yes_____No
   (If yes, go to item 2; if no, antidegradation review is not required.)

2. Is the receiving stream considered to be a Tier 3 water?_____Yes_____No
   (If yes, refer to ONRW provisions at 335-6-10-.10; if no, go to item 3.)

3. Is the receiving stream considered to be a Tier 1 water? _____ Yes _____No
   (If yes, refer to Tier 1 provisions at 335-6-10-.04(2); if no, go to item 4.)

4. Is the receiving stream considered to be a Tier 2 water? _____Yes_____No
   (If yes, go to item 5.)

5. Has the applicant submitted a completed *Alternatives Analysis* checklist?_____Yes____No
   (If yes, go to item 6.)

6. Has the applicant submitted information demonstrating that the proposed discharge will accommodate important economic or social development? Yes No (If yes, all information needed for the antidegradation review is available.)

The information submitted by the applicant demonstrating that the proposed discharge will accommodate important economic or social development and the completed *Alternatives Analysis* checklist will be placed in the permit file, and utilized by the Department in making a determination regarding permit issuance.

Completed By:_____Date: _____

Supplemental Antidegradation Analysis for DC Alabama, Inc. NPDES Permit Application

Antidegradation Analysis – Discharge to the Econchate WWTP

There are two options for discharging pretreated slurry pond wastewater and process stormwater to a larger POTW within the Montgomery Waterworks and Sanitary Sewer Board's (MWWSSB) service area (Econchate WWTP). The first option will require the construction of a pump station with a maximum capacity of 500,000 gallons per day and approximately 24,000 feet (4.5 miles) of force main to reach the Econchate WWTP interceptor line near Jenkins Creek / I-85. The system will include wastewater treatment to remove solids prior to discharge to a 0.5 MGD pump station. The pump station will pump the treated wastewater through a 24,000-foot force main to the Econchate WWTP interceptor line located adjacent to Jenkins Creek on the north side of I-85. This scenario will require easements from Montgomery County and from the State of Alabama. Discharging to the MWWSSB collection system will also require permits / fees from ADEM and MWWSSB. This treatment option is not feasible because of the extensive infrastructure required and the time required to obtain easements and design / construct the wastewater treatment system, pump station, and force main.

Option #1 – Pump pretreated wastewater from DC Alabama, Inc. to Econchate WWTP Interceptor Line near I-85.

- Infrastructure / Construction Requirements:
  - Wastewater pretreatment system – solids separation and handling, monitoring
  - 0.5 MGD effluent pump station to pump pretreated wastewater to Econchate WWTP interceptor line (assumes only one station will be needed)
  - Force main from pump station at DC Alabama to Econchate WWTP interceptor line - approximately 24,000 feet
- Regulatory Requirements:
  - Purchase right-of-way easements from Montgomery County and State of Alabama
  - Obtain SID permit from ADEM (includes application and fee)
  - Obtain MWWSSB approval to tap into Econchate WWTP Interceptor Line at Jenkins Creek / I-85 (includes application and fee)

The second option for discharging pretreated slurry pond wastewater and process stormwater to a larger POTW within the MWWSSB service area will require the construction of a wastewater treatment system to pretreat the wastewater to remove solids. The treated wastewater will be stored in large tanks at the DC Alabama facility until it is carried by tanker trucks to the Econchate WWTP. Tanker trucks have a capacity to carry approximately 7500 gallons. The wastewater flow rate is projected to average 200,000 gallons per day. For safety reasons, hauling of wastewater will be restricted to weekdays only between the hours of 9:00 am and 3:00 pm. This schedule results in 1,400,000 gallons per week to be hauled by truck to the Econchate WWTP. The daily volume to be hauled from Monday through Friday is 280,000 gallons. Assuming that a tanker truck will require 2.5 hours to fill the tank, drive to the Econchate WWTP from the DC Alabama facility, empty the tank at the WWTP, and return to DC Alabama for the next load, this scenario will require 16 tanker trucks per day to haul 280,000 gallons from DC Alabama to the Econchate WWTP. This scenario will also require construction of the necessary wastewater storage and pumping facilities at DC Alabama for filling the tanker trucks. This option also assumes that the MWWSSB would approve the transport of treated wastewater to the Econchate WWTP using this number of large tanker trucks over the course of a 6-hour time period each week day. This treatment option is not feasible because of the large number of tanker trucks needed to transport the pretreated wastewater safely to the Econchate WWTP.

Option #2 – Truck pretreated wastewater from DC Alabama to Econchate WWTP

- Infrastructure / Construction Requirements:
  - Wastewater pretreatment system – solids separation and handling, monitoring, holding / storage tanks
  - Tanker truck loading facility – concrete pads / aprons, pumps from storage / holding tanks (750,000-gallon capacity)
  - Stormwater / spill collection system
  - Trucks (leased / contract) – 7,500-gallon capacity each
    - To reduce potential for accidents, restrict hauling times to between 9:00 am and 3:00 pm (6 hours) on weekdays
    - 0.2 MGD x 7 days = 1,400,000 gallons per week = 280,000 gallons per day Monday - Friday
    - 38 truck-trips / 6 hours = 6.3 truck-trips per hour
    - Assume 2.5 hours to fill the tanker truck, drive to Econchate WWTP, empty the truck, and return to DC Alabama
    - 6.3 truck-trips per hour x 2.5 hours = 16 trucks required
- Regulatory Requirements:
  - Obtain SID permit from ADEM (includes application and fee)
  - Obtain MWWSSB approval to empty 16 tanker trucks per day of pretreated wastewater at the headworks of the Econchate WWTP (includes application and fee)